The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

The prepaid subscription to THE CHEMICAL AGE *is 21s. per annum for the United Kingdom, and 26s. abroad. Cheques, Money Orders, and Postal Orders should be made payable to Benn Brothers, Ltd.*

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"Leading the Blind"

THE remarks we made last week on views about chemical profits circulated in the official organ of the Chemical Workers' Union have given the general secretary and editor a bit of a friendly "jolt," as they were intended to do. The spacious generalisations that Mr. Gillian's reply largely consists of are familiar outpourings; they need not detain us. When he descends to mere facts, however, he becomes quite instructive, and it is worth while to try to understand what his position amounts to.

First of all, he admits that running the chemical industry is not an easy or brainless business. It is, indeed, so difficult that the idea that the workers for whom he speaks should themselves start up large chemical works is "too silly for us to contemplate." We agree. And yet if there are these easy millions of profit awaiting them, it seems a little slack not to pick them up instead of leaving them for the idle capitalist. But Mr. Gillian has a much simpler solution than employing his own money or brains or experience in establishing chemical works and providing employment for the workers—it is simply "that the I.C.I. and its monopolies in alkalis and explosives, etc., should forthwith be taken over by the State." Could anything be more innocent and childlike? The State, representing Mr. Gillian and his friends, sits quietly by until business men, chemists, engineers, and groups of other people have established costly research organisations, designed and erected expensive plant, produced goods essential to the maintenance of other industries, and established distributing and selling organisations throughout the world, and then when the enterprise succeeds and the risks are gone, the State suddenly wakes up and decides to take it all over! And what exactly does Mr. Gillian mean by "taken over?" Does he mean wholesale confiscation of all private property and interests on the Russian plan—which, of course, would include the confiscation of the investments of the workers themselves? If so, he is advocating the form and methods of Russian communism, which the British trade union movement has repudiated. He leaves this rather important point in doubt.

Mr. Gillian has not ventured to suggest that "the small, insignificant, and needy shareholder" should lose his investments or is not entitled to interest on the money he has lent. But he says that, in speaking of the small investor, we have missed "a handful of banks and insurance companies who hold a very large proportion of I.C.I. stock." He could hardly have picked a less happy illustration of his own case, for if there are any institutions that represent small investors they are the banks and insurance companies. The number of working people who have deposit accounts in the banks or have taken out insurance policies against sickness and death runs into hundreds of thousands. What does Mr. Gillian imagine that the banks and insurance companies do with the money entrusted to them? Put it in a stocking and bury it? The banks and insurance companies are not only responsible for repaying this money, but also for paying interest on it, and they can only pay interest on it by investing or otherwise utilising it in industry. And if it is proposed to seize or "take over" the investments of the banks and insurance companies it might hit a number of rich people, but it would hit hundreds of thousands more poor people.

We are glad to see that Mr. Gillian recognises as "workers" the technician, manager, clerk, foreman, salesman, etc., but he seems not to have heard of the man whose work must be done before any of these come into play. That is the chemist who may have spent years of work out of sight in perfecting a new process and who has to be paid by someone before there is any prospect of any return. And is it not a little inconsistent to claim the "manager" as among the workers for whom he speaks, when in the next breath he declares that the workers' interests are fundamentally in perpetual opposition to "managerial" interests?

The Economy Campaign

ANY doubts—were any originally entertained—of the success of the National Campaign for Public Economy have long been dispelled. By Saturday of this week no fewer than 26 demonstrations, and a host of smaller meetings, will have been under the auspices of the Friends of Economy, and fourteen meetings of various kinds have been arranged to take place in the next week or so. In addition, there are very few bodies representing trade or industry, the taxpayers or the parties, that have not in one way or another had the subject of economy in national and local expenditure under review. In a very grave financial crisis the business community and the taxpayers generally have instinctively and spontaneously rallied to a movement that is beyond all merely partisan ties.

The measure of the importance attached by business folk of all sections to the need for economy can easily be seen in the whole-hearted support that the economy movement has had from chambers of commerce in places as far apart as Birkenhead and Bath, Edinburgh and Northampton. Among the bigger cities covered by demonstrations already held are London, Manchester, Hull, Sheffield, Edinburgh and Liverpool, and other meetings are shortly to take place in Nottingham, Plymouth, Leeds, Newcastle and Middlesbrough. The Campaign has thus become a definite factor in the national life. The mere fact that it has made of economy a public issue of the first importance and a topic of general discussion would of itself be sufficient to justify it. But as it grows in intensity its value will be seen even more definitely in the gradual slowing down of the rate at which recent Governments have so prodigally scattered the taxpayers' money, and eventually in the achievement of definite measures of retrenchment.

Hints for Commercial Visitors

THE Department of Overseas Trade continues to do good work by the publication of "hints for commercial visitors" to the various foreign countries where there is possibility of gaining further proportions of world trade. These documents are prepared on the basis of information received from the Consuls and Commercial Counsellors at the chief commercial centres of the countries in question, and they are not lacking in detail. The most recent example before us relates to Iraq. It deals with cost of living and hotel accommodation; imports and exports; railway facilities, waterways and roads; passports, customs formalities, and even the most minor matters which are liable to arise in the minds of those who may contemplate a visit to Iraq or look to it as being a possible outlet for their manufactures.

This particular document, too, is certainly of passing interest to the British chemical industry, as we learn from it that the total imports of chemicals and chemical preparations (acids, alum, bleaching materials, disinfectants, copperas, etc.) amounts to 545,589 rupees (roughly £40,000), of which about 45 per cent. constitutes imports from the United Kingdom. In addition, there are soaps to the total value of 1,734,856 rupees, and drugs and medicines amounting to 858,307 rupees. These figures are surprisingly large for a country like Iraq, and there are, no doubt, many other similar parts where British chemical manufacturers may find new openings.

Overseas Chemical Trade

THE statistics of overseas chemical trade disclosed in the Board of Trade returns for March indicate that business remains nearly at the low level of the past few months as compared with the corresponding month of last year. There is a decrease of £614,387 in chemical exports, of £173,531 in chemical imports, and of £199,626 in chemical re-exports. When the figures, however, are more closely analysed, and the percentages worked out, these figures appear less unfavourable than they do at first sight. The decline in exports, for example, is 30·5 per cent. against a decline of 40·4 per cent. in March; the decline in March and February imports is respectively 13·2 and 11 per cent. as compared with a year ago. The heavy decline in chemical re-exports has one favourable side; it shows that the imports are being absorbed in British industry and are not merely in course of passage through this country.

The Society's Jubilee

WE gather from an announcement issued by the Society of Chemical Industry that the arrangements for the jubilee celebrations in July are proceeding satisfactorily. In addition to the usual conferences, garden parties, and visits to works and an exhibition of chemical plant, several distinguished representatives of chemical industry are to be admitted to the honorary membership of the Society, and the Society's medal will be presented to Dr. Herbert Levinstein. The meetings will be attended by many delegates from overseas. One of the most interesting features of the jubilee will be the history of British chemical industry compiled by Dr. Stephen Miall and published by Ernest Benn, Ltd.

Books Received

ANNUAL REPORT OF THE CITY ANALYST FOR THE YEAR 1930. By H. E. Monks. Salford: Municipal Chemical Laboratories Pp. 58.

ECONOMIC AND TRADE CONDITIONS IN AUSTRALIA, TO DECEMBER, 1930. By R. W. Dalton. London: H.M. Stationery Office. Pp. 238. 3s. 6d.

The Calendar

Apr.		
21	Institute of Fuel (N.W. Section): "Fuel Technology and the Classification of Coal." C. A. Seyler.	Engineer's Club, Manchester.
22	Institute of Fuel (Midland Section): "The Smoke Problem." Arnold Marsh. 6.15 p.m.	Grand Hotel, Birmingham.
24	Royal Institution: "Joseph Priestley and His Place in the History of Science." Sir Philip Hartog. 9 p.m.	21, Albemarle Street, London.
24	Chemical Engineering Group: Annual General Meeting. "Science in Industry." Sir Richard Gregory. 6.45 p.m.	Waldorf Hotel, Aldwych, London.
24	British Association of Chemists (Scottish Section): Annual General Meeting. 7.30 p.m.	Central Halls, Bath Street, Glasgow.
29	Royal Society of Arts: "Stainless Metals." Professor Sir Harold Carpenter. 8 p.m.	John Street, Adelphi, London

"Leading the Blind"

To the Editor of THE CHEMICAL AGE.

SIR,—Your leader, headed the above, in issue April 11, will certainly give a jolt to countless readers of your valuable and informative journal beside the writer. Hitherto your journal has been noted for the dignity, sound sense, and good taste of its views. In this article, written apparently under a sense of rage with the other fellow's point of view, you throw to the winds all your editoral virtues, make a series of unintelligent statements, and adopt a discreditable line of showing your objection to another viewpoint by suggesting the other fellow and his type are "brainless dolts."

It is beneath my dignity to hand you a similar brick—I prefer to reason and argue with you rather than abuse you, if I may. You want to know what chemical workers who have saved a few pounds, etc., etc., think of the "stuff" written by me on chemical profits. Very few chemical workers (mental or manual) in Britain to-day have means to save their miserable salaries, and wages are more than mortgaged in food and rent before they get them. I should imagine, having in mind our journal's circulation has gone up over 5,000 copies per issue in the last month, quite a lot of chemical workers are very interested, indeed, in the "stuff," etc., particularly combine workers, mainly technical and administrative staffs.

Your conception of a "worker" needs brushing up. A technician, manager, clerk, foreman, salesman, etc., are workers as well as "labourers."

I have never in all my career in the industry, now nearly 25 years, ever suggested that running the chemical industry is an easy or brainless business. I know far too much about it to say anything so silly. We have, however, very definite views as to whom in the concern actually displays the initiative and resource and accepts the real responsibility for the concern's success. Your picture of the small, insignificant and needy shareholder apparently misses a handful of banks and insurance companies, who hold a very large proportion of I.C.I. stock. "What do the workers give?" you ask. Their brains, their brawn, and, at times, their lives through technical and managerial indifference or incompetence. Stock-holders are not subject to such calls. Your suggestion that we start up in opposition to Billingham, Northwich, and Widnes is too silly for us to contemplate. We have another and more successful solution. That the I.C.I. and its monopolies in alkalis and explosives, etc., should forthwith be taken over by the State—turned into a real Imperial Chemical Industries, operating in the interests of the entire community instead of for the enrichment of the few.

On the question of the legitimate functions of a trade union, we are sure you will not agree with our ideas, which are that a trade union's function is to advance and protect any and every interest of its members which, in the main, are fundamentally in perpetual opposition to the managerial and ownership interests under capitalist society. Our influence for the good of chemical workers (mental and manual) increases from year to year. Our function is, as you state, "leading the blind" multitude in this industry to understand the real from the sham problems, whereby all who labour by brain or hand shall receive their fair share of wealth and life they create and make possible.—Faithfully yours,

ARTHUR J. GILLIAN
(Editor *The Chemical Worker*, official organ of The Chemical Workers' Union).

[This letter is dealt with in our editorial columns.—Ed.*C.A.*]

Sugar Content of Sugar Beet

IN a circular addressed to farmers on the price of sugar beet for the forthcoming year the Irish Sugar Manufacturing Co. give the average sugar content of beet grown as 16½ per cent. The prices offered to growers of beet are:—Beet yield 15½ per cent. sugar, 38s. per ton; beet yield 16½ per cent. sugar, 40s. 6d. per ton; beet yield 17½ per cent. sugar, 43s. per ton. The sugar pulp, left after the beet has been pulped for the extraction of sugar, has a content of about 40 per cent. treacle, and has been found an excellent foodstuff for stall-fed cattle, sheep and pigs, and increases the percentage of fat in milk more rapidly than the majority of other carbohydrates. The pulp has a ready sale among Irish farmers, as they find it puts flesh on stock very rapidly.

A New Dyestuff

A Green Shade in the "Ice Colours"

A FRESH triumph of British chemical research is provided by the production in the laboratories of the British Dyestuffs Corporation of a new green synthetic dye of a bright green colour known as Duratol Green G. Behind this discovery lies the story of more than half a century of patient endeavour and research. Over 50 years ago, in 1880, a north country dyestuff firm discovered a new method of dyeing known as dyeing with "ice colours" because they could only be used in water kept cold with ice. With these dyes rich and brilliant shades of red were obtained rivalling in beauty and to a certain extent replacing the famous Turkey Red. To dye with Turkey Red takes many weeks as against less than an hour with "ice colours."

Just before the war German chemists produced a new series of these dyes and consequently Germany became pre-eminent in this field. Hundreds of "ice colours" became available so that not only red shades could be dyed but yellows and oranges, blues and violets, blacks and browns. Yet no green was forthcoming, and it is a curious fact that the dyestuff chemist engaged in building up complicated molecules to make new dyes of increasing fastness has always found that green presents one of his most elusive problems. Nature, so prodigal of green, guards her secrets jealously, and the green shades discovered in the laboratory have so far been few and far between. Duratol Green G is in fact only the second successful green discovered in recent years, the other being the well-known Caledon Jade Green.

Duratol Green G is a new green in the "ice" range. It is a bright grass green of outstanding fastness in washing and boiling. It will actually stand boiling for six hours in an alkaline solution without changing shade, so that it is safe to say it will survive all the laundering it is likely to meet with in such articles as dress goods, bedspreads and the new fashionable coloured table-cloths. It can be used, not only for colouring cotton and linen articles, but also for artificial silk, as in deep shades a rich bottle green of great value to the trade can be obtained. This dyestuff is further evidence that the British dyestuff industry is fully alive to the importance of being first in the field in the supply of the novelties which are essential to the prosperity of the textile trades.

Ethylene Oxide as a Fumigant

A PATENT covering the use of ethylene oxide as a fumigant and insecticide has been granted by the United States Patent Office to R. C. Roark and R. T. Cotton, of the U.S. Department of Agriculture, and has been simultaneously dedicated to the Government and people of the United States. This patent was applied for just in time to secure the free use of ethylene oxide for the American people. A well-known German dye company, recognising the commercial possibilities of ethylene oxide, had already applied for a United States patent in addition to the German patent under which this gas is used in Germany. Following a hearing before the examiner of interferences of the U.S. Patent Office, however, the prior claim of the American applicants was recognised and the public service patent was granted to them on February 3.

Ethylene oxide has been used with success in grocery stores, food-supply rooms, dried fruit establishments, work rooms, and for treating tobacco. It has also been used with success in concrete elevator bins containing wheat and in reinforced concrete warehouses where grain products and animal foodstuffs are stored.

Corrosion of Tin-plate Containers by Food Products

A SMALL LABORATORY for research on canning was established at the Low Temperature Research Station, Cambridge, in 1927, and accounts of its work have appeared in the Annual Reports of the Food Investigation Board. *The Corrosion of the Tin Plate Container by Food Products* (Food Investigation Special Report No. 40, H.M. Stationery Office, price 1s. 6d. net) now embodies the result of three years' work on the corrosion of the tin-plate container. This report should be especially useful to the canning industry in Britain, and to those who are generally interested in corrosion, which is a matter of growing importance in many of our lesser industries.

Chemical Exhibits at Buenos Aires

Notes by Mr. John Benn

In addition to the account of a visit to the nitrate fields, which appeared last week, Mr. John Benn who is making a tour of South America, on behalf of Benn Brothers, Ltd., sends the following notes on British chemical exhibits at the British Trade Exhibition at Buenos Aires, recently opened by the Prince of Wales.

THE chemical industry is represented at Buenos Aires by comparatively few firms, but their exhibits are thoroughly typical. Most of the stands are in Pavilions 4 and 6, where numerous machinery products are displayed. The largest stand measured by floor space has been taken by Baker, Perkins, Ltd., who show a plant for making chocolate in actual operation. Among the industries developed in Argentina since the war the manufacture of confectionery holds a prominent place, and factories have been erected by local firms. One of the most popular brands of chocolate is named " Kelito " and the Baker Perkins' exhibit shows its production in every stage. A machine is seen at work mixing the ingredients at one end of the stand, while at the other the chocolates are sold to the public. The exhibit forms an excellent advertisement for British chemical plant and engineering, as the attraction of " seeing something

BENN BROTHERS' STAND AT THE EXHIBITION.
MR. A. C. ROUSE, F.B.I. (LEFT) AND MR. JOHN BENN (CENTRE).

made " is increased by the fact that the product is one of the best known in the country. Various machines are shown separately on another part of the stand, including Peerless mixing plant.

Imperial Chemical Industries

The widest range of chemicals on view is found on Imperial Chemical Industries' stand, of which an advance description appeared in THE CHEMICAL AGE of November 1, 1930. The model prepared in London for the guidance of the branch company at Buenos Aires has been followed in detail, the object being to show how Imperial Chemical Industries, Ltd., serves the requirements of Argentina. Apart from the big trade in sheep dip and agricultrual chemicals, the development of local industries is providing a demand for other products hitherto imported only in small quantities. The uses of " Rexine " leather cloth are illustrated by samples in a wall case and by actual articles covered with this artificial leather, such as gramophones. The brand is one of the best known in Argentina, and the growing use of motor cars may increase the demand for coachwork and upholstery purposes.

Staveley Coal and Iron

Chemical by-products are a prominent feature on the stand reserved by the Staveley Coal and Iron Co. Iron ingot, and cast-iron pipes of many types are shown, with samples of coal, and a model illustrates the use of iron in concrete buildings. Some photographs of the works at Chesterfield form a striking background to the whole exhibit.

All the iron and steel used in Argentina is imported. As in other markets the imports from Britain have suffered from the competition of foreign makers, but a satisfactory demand is arising for special metals required by the newer industries. The sale of tin plate has greatly increased in the past five years owing to the local manufacture of biscuits and confectionery. For the same reason the market for special steels is improving, and considerable quantities of stainless steel are now being imported.

Thomas Firth and Sons

Thomas Firth and Sons have a big display. The revolving globe in Staybrite steel is seen by every visitor as it turns in the sunlight not far from the main entrance. This exhibit is gradually acquiring a world-wide reputation, having travelled to Buenos Aires from the Trade Fair at Antwerp. The firm has made Staybrite the principal feature of its stand in Pavilion 4. At either corner is a pillar of this metal, and coloured lights are reflected in the polished surface. At the back of the stand there are ten concave shelves which are in turn illuminated in green, red and blue. Cutlery in stainless and Staybrite steel is exhibited in showcases, with a wide range of kettles, saucepans, and beaten trays, also in Staybrite. In order to popularise this metal, knife cleaners, shoe horns, and shoe trees are being offered to the public at a nominal figure and many visitors are buying them. Tools are also shown and there are specimens in " Diehard " and " Speedicut " steels. The properties of Staybrite are demonstrated by a clever model consisting of two wheels in a tank of water half exposed to the air, and the surface of each wheel is covered with screws in all sizes. Naturally those of ordinary steel show a coating of rust.

The third aspect of Firth's exhibit illustrates the uses of Staybrite sheets in the manufacture of chemical plant. Owing to the growth of local industry in Argentina the demand for our metals is increasing, and Staybrite has been installed by several big factories. The most important is the Fabrica de Alpargatas, where enormous quantities of rubber soled shoes are manufactured. The plant naturally includes chemical tanks, and the same firm is using metal-lined vats for dyeing purposes. In a prominent showcase a selection of door handles, bolts and other fittings made of Staybrite is exhibited by Tonks (Birmingham), Ltd.

Ruston and Hornsby

A notable feature of the exhibition is the machinery shown in actual operation on many stands. One of the most attractive exhibits of this kind is a portable oil engine shown by Ruston and Hornsby, Ltd. By pumping water from a lower tank to a higher one, a waterfall is formed, the water flowing in a continuous cycle. This exhibit is seen on the stand of Agar, Cross and Co., who represent the firm in Argentina.

Babcock and Wilcox

Various working models illustrating the steam raising plant manufactured by Babcock and Wilcox are shown on their stand. At the back is an illuminated diagram of a C.T.M. type water tube boiler in which the passage of the steam through the plant is clearly indicated. The boilers made by this firm are already used in many phases of Argentine industry. The super power station of the C.H.A.D.E. in Buenos Aires has eight boilers of this make, while the new station of the Cia. Italo, at present under construction, is also being fitted with the same plant. Babcock and Wilcox are also installing the boilers for the new electrical stations at Montevideo and Bahia Blanca. The works of the Primitiva

Gas Co. here employ these boilers, and they are also used by the new rubber and tyre factories recently erected by the Pirelli and Goodyear companies.

Chesterfield Tube Co.

This firm is represented in Buenos Aires by Mr. A. H. Davies and their products are exhibited by this agent. A member of the firm, Mr. A. C. Toogood, has come out for the Exhibition, and we discussed the prospects for this trade. The Chesterfield Tube Co. has supplied locomotive tubes for some of the railway companies here, and their boiler tubes and steel pipes were included in the Argentine destroyer *Mendoza*, built by J. S. White and Co., of Cowes. The exhibit shows " Feroma " steel cylinders and also cold drawn weldless steam pipes up to 24 in. internal diameter. There are also tubes of the latest type of chromium and nickel steel.

Chemical Apparatus

Chemical apparatus is not much in evidence, but a wide range of thermometers is shown by J. Pillischer, Ltd., in Pavilion 9. An excellent impression of a research laboratory is afforded on the stand reserved by the Shell Mex (Argentina), Ltd., illustrating a series of processes by which the crude oil is refined. Filter paper manufacturers are represented by T. B. Ford, Ltd., whose agents here are Bessler, Waechter and Co. Other exhibits on this stand are made on behalf of English China Clays, Ltd., and the Brothers Chemical Co.

Several appliances used in chemical works are shown on a stand arranged by J. and A. Donaldson, who represent Bell Brothers, Ltd., Thomas Broadbent and Sons, and the Cambridge Instrument Co. in this market. A large centrifugal drying machine for use in dye works and soap factories, etc., is the principal exhibit of Thomas Broadbent and Sons. Several types of filter are also shown by Bell Brothers, Ltd.

The Sturtevant Co. exhibit ventilators of various types including portable models on trolleys. A large air washer is shown in actual operation on this stand. A model lighthouse in Pavilion 3 attracts attention to the exhibit of Chance Brothers and Co., Ltd., of Birmingham, who are represented here by Evans, Thornton and Co. This firm constructs signalling apparatus suitable for the Argentine market.

Chemical by-products are shown on the stand of the Marley Hill Chemical Co., of Newcastle, who are exhibiting in conjunction with John Bowes and Partners, Ltd.

Six life-size models of men surround the stand of Siebe, Gorman and Co., two in diving suits and four wearing breathing apparatus for industrial purposes. The " Salvus " half-hour breathing equipment is prominently featured and other exhibits include fire extinguishers of the soda-acid and foam types.

Hoses and tubes of all kinds form the principal feature of Macinlop's exhibit. The practical application of these products is cleverly illustrated by a picture of a railway carriage in section, the various features such as steel hosing being joined to actual samples by coloured tapes. Rubber soled tennis shoes and rubber toys are also exhibited.

As already remarked, the growth of local industries in Argentina should increase the demand for chemical products and there are also obvious openings for manufacturers of chemical engineering plant.

The British Portland Cement Manufacturers, Ltd., have a stand in Pavilion 6, designed in the form of a Dutch garden. There are cement balustrades and building blocks, and plants grown in tubs produce an outdoor effect.

Tungstone Accumulator Co.

This company, who are exhibiting in conjunction with Dorman's, of Stafford, and Vislock, Ltd. (patent lock nuts), are showing house lighting batteries and cells as used at power stations, telephone exchanges, etc., also a complete range of car starting and lighting batteries. Stand No. 16. Pavilion 14. Col. Griffiths is in charge and the address is 756, Moreno.

"Industria Britanica"

Personal Message from the President of Argentina

BUENOS AIRES, *March* 27.

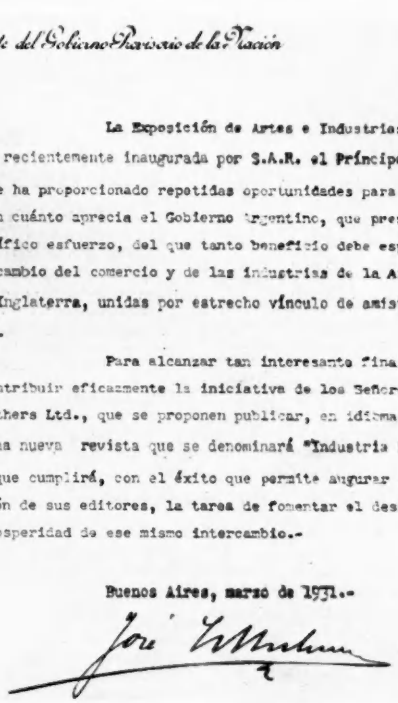
I have to-day had the honour of receiving a message from the President of Argentina, who warmly commends *Industria Britanica* and predicts that the new journal will contribute to the furure success of British trade with the Republic. A translation of the message, which is reproduced in facsimile, is as follows :—

" The Exhibition of British Arts and Industries recently inaugurated by His Royal Highness the Prince of Wales has given me many opportunities to show how greatly the Argentine Government, over which I preside, appreciates this magnificent effort from which the interchange of commerce and of the industries of the Argentine and England, united by close links of age-long friendship, must expect so much benefit.

The initiative of Messrs. Benn Brothers, Ltd., who propose to publish in the Spanish language a new journal under the title of *Industria Britanica*, will greatly contribute to the attainment of this desirable end, and this, with the success which the reputation of its publishers permits one to expect, will promote the task of encouraging the development and prosperity of this interchange.

(*Signed*)
JOSÉ F. URIBURU."

Buenos Aires, March 1931.



Presidente del Gobierno Provisorio de la Nación

La Exposición de Artes e Industrias Británicas, recientemente inaugurada por S.A.R. el Príncipe de Gales, me ha proporcionado repetidas oportunidades para manifestar en cuánto aprecia el Gobierno Argentino, que presido, ese magnífico esfuerzo, del que tanto beneficio debe esperar el intercambio del comercio y de las industrias de la Argentina y de Inglaterra, unidas por estrecho vínculo de amistad secular.-

Para alcanzar tan interesante finalidad, ha de contribuir eficazmente la iniciativa de los Señores Benn Brothers Ltd., que se proponen publicar, en idioma castellano, una nueva revista que se denominará "Industria Británica" y que cumplirá, con el éxito que permite augurar la reputación de sus editores, la tarea de fomentar el desarrollo y prosperidad de ese mismo intercambio.-

Buenos Aires, marzo de 1931.-

FACSIMILE LETTER TO BENN BROTHERS, LTD., FROM THE ARGENTINE PRESIDENT.

This recognition from the highest authority in Argentina is very gratifying to the publishers and reflects the keen interest shown by President Uriburu in the need for developing international trade through propaganda in the Spanish language. Particulars of *Industria Britanica* were given to the President by Dr. R. C. Aldao who, in common with other business leaders in Buenos Aires, is doing everything possible to assist the new enterprise. At a meeting last week, assistance was promised by several railway companies, which will circulate the new journal to the most influential buyers throughout the vast area served by their lines. *Industria Britanica* is also supported by British bankers in Argentina, who are the first to recognise it as a valuable stimulus to trade. Benn Brothers, Ltd., are planning a complete service to assist manufacturers to develop trade with South America. The publication of *Industria Britanica* as an advertising medium is only the first step. They will also provide a translation bureau to prepare copy in Spanish and to deal with subsequent correspondence, translating inquiries received by the advertiser and his replies. The cost of space in the new journal will include three services, which will provide a direct link between British manufacturers and thousands of new potential customers.

British Overseas Chemical Trade in March

An Improvement in Exports

ACCORDING to the Board of Trade returns of British overseas trade for March, as compared with March, 1930, exports totalled £1,396,693, which is £614,387 lower than the corresponding figure for 1930; imports at £1,142,848 have dropped £173,531; and re-exports at £43,421 are £199,626 down. For the first three months of the present year there have been declines of £1,892,878 in exports and £579,943 in imports compared with the corresponding period of 1930. There is, however, a definite improvement which becomes noticeable when the figures are analysed still further on a percentage basis. So far as exports are concerned, the decline is only 30·5 per cent. below the figures for March, 1930, whereas last month it was 40·4 per cent. below the figures for February, 1930; for imports the declines for March and February were 13·2 and 11·3 per cent. respectively. Exports have, therefore, materially increased, and imports have only slightly decreased.

Imports

	Quantities Month ended March 31,		Value Month ended March 31,	
	1930.	1931.	1930.	1931.
CHEMICAL MANUFACTURES AND PRODUCTS—			£	£
Acetic anhydride ..cwt.	240	639	821	1,991
Acid, Acetic.....tons	1,729	551	66,206	21,815
Acid, Tartaric ....cwt.	2,706	4,753	17,512	20,549
Bleaching materials ,,	5,806	8,325	8,258	12,090
Borax ..... ,,	26,570	24,999	15,441	14,361
Calcium carbide ... ,,	73,386	75,205	44,681	45,712
Coal Tar Products value	—	—	2,489	12,577
Glycerine, Crude ..cwt.	1,260	9,607	2,272	15,165
Glycerine, Distilled ,,	820	2,036	2,080	4,454
Red Lead and Orange Lead .....cwt.	5,340	3,393	8,902	4,466
Nickel Oxide ..... ,,	45	186	216	870
Potassium Nitrate (Saltpetre) .....cwt.	11,725	12,669	11,565	10,823
Other Potassium Compounds .....cwt.	520,294	356,354	131,017	102,583
Sodium Nitrate ... ,,	51,313	51,572	24,569	22,985
Other Sodium Compounds .....cwt.	27,845	41,203	19,164	26,759
Tartar, Cream of ... ,,	2,834	2,000	13,822	8,022
Zinc Oxide.....tons	1,132	734	32,804	17,275
All Other Sorts ...value	—	—	270,057	216,885
DRUGS, MEDICINES, ETC.—				
Quinine and Quinine Salts.....oz.	134,874	203,324	9,858	13,788
Bark Cinchona (Bark Peruvian, etc.) ..cwt.	1,510	275	6,597	1,248
Other Sorts .....value	—	—	191,403	207,757
DYES AND DYESTUFFS—				
Intermediate Coal Tar Products .....cwt.	104	34	1,284	408
Alizarine ..... ,,	45	55	1,781	2,243
Indigo, Synthetic .. ,,	—	—	—	—
Other Sorts ..... ,,	4,994	5,251	112,045	105,506
EXTRACTS FOR DYEING—				
Cutch .....cwt.	5,580	5,369	9,228	9,006
All Other Sorts .... ,,	3,260	3,088	11,418	9,171
Indigo, Natural.... ,,	—	71	—	2,209
Extracts for Tanning (solid or liquid)..cwt.	106,994	90,308	105,418	87,747
PAINTERS' MATERIALS AND MATERIALS—				
Barytes, Ground ..cwt.	52,185	43,618	10,776	8,847
White Lead (dry).. ,,	14,914	11,426	26,698	16,516
All Other Sorts .... ,,	119,835	92,132	157,997	119,020
Total of Chemicals, Drugs, Dyes, and Colours.....value	—	—	1,316,379	1,142,848

Exports

CHEMICAL MANUFACTURES AND PRODUCTS—				
Acids, Sulphuric ...cwt.	14,169	9,190	4,028	3,404
Acid, Tartaric ..... ,,	655	591	4,604	3,234
Ammonium Chloride (Muriate .....tons	326	542	6,767	6,523
Ammonium Sulphate—				
To Spain and Canaries tons	12,424	8,516	104,250	59,777
,, Italy ..... ,,	383	50	3,347	370
,, Dutch East Indies tons	1,065	1,511	9,873	11,331
,, China (including Hong Kong) tons	7,959	5,516	71,418	41,401
,, Japan ..... ,,	12,821	905	118,661	5,909
To British West India Islands and British Guiana tons	749	998	6,320	7,072
,, Other Countries tons	11,113	8,325	96,811	62,101
Total.....tons	46,514	25,841	410,680	187,961
Bleaching Powder (Chloride of Lime) ....cwt.	43,477	27,420	12,765	8,361
COAL TAR PRODUCTS, NOT ELSEWHERE SPECIFIED—				
Anthracene .....cwt.	—	—	—	—
Benzol and Toluol galls.	11,638 Cwt.	707 Galls.	2,004	78
Carbolic Acid (Crude) ..	2,279 Cwts.	4,906 Cwts.	4,129	753
Carbolic Acid (Crystals).	1,522 Galls.	615 Galls.	5,047	1,545
Cresylic Acid.....	130,026	51,438	16,339	6,632
Naphtha .....Galls.	4,552	4,918	541	513
Naphthalene (excluding Naphthalene Oil) cwt.	12,549	8,663	4,610	2,016
Tar Oil, Creosote Oil, etc. .....galls.	2,099,868	118,228	53,822	4,207
Other Sorts .....cwt.	15,328	10,456	13,944	6,337
Total value	—	—	100,436	22,081
Copper, Sulphate of ..tons	7,717	5,497	185,984	103,065
Disinfectants, insecticides, etc. cwt.	37,647	26,672	74,442	58,163
Glycerine, Crude ....cwt.	26	918	65	1,101
Glycerine, Distilled .. ,,	6,950	4,424	19,303	11,130
Total..... ,,	6,976	5,342	19,368	12,231
POTASSIUM COMPOUNDS—				
Chromate and Bi-chromate .....cwt.	929	1,032	1,840	2,138
Nitrate (Saltpetre) . ,,	767	874	1,527	1,526
All Other Compounds cwt.	3,613	6,685	14,012	9,452
Total..... ,,	5,309	8,591	17,379	13,116
SODIUM COMPOUNDS—				
Carbonate, including Soda Crystals, Soda Ash and Bicarbonate cwt.	407,246	298,515	108,200	83,936
Caustic ..... ,,	162,788	133,440	111,570	90,110
Chromate and Bichromate .....cwt.	3,444	1,278	5,501	2,155
Sulphate, including Salt Cake .....cwt.	16,077	27,743	2,231	3,608
All Other Compounds cwt.	58,767	33,044	62,564	43,622
Total..... ,,	648,322	494,020	290,066	223,431
Zinc Oxide.....tons	240	283	7,902	6,598
Chemical manufactures, etc., all other Sorts value	—	—	265,789	215,169
Total of Chemical Manufactures and Products.. value	—	—	1,400,210	836,337

	Quantities Month ended March 31. 1930.	1931.	Value Month ended March 31, 1930. £	1931. £
DRUGS, MEDICINES, ETC.—				
Quinine and Quinine Salts.....oz.	216,523	145,086	21,131	12,969
All Other Sorts....value	—	—	218,039	215,774
Total..... ,,	—	—	239,170	228,743
DYES AND DYESTUFFS—				
Products of Coal Tar cwt.	8,517	10,901	68,727	86,330
Other Sorts ..... ,,	10,296	7,624	12,362	9,098
Total..... ,,	18,813	18,525	81,089	95,428
PAINTERS' COLOURS AND MATERIALS—				
Barytes, Ground ..cwt.	3,031	4,624	1,274	1,836
White Lead (dry) .. ,,	1,781	2,125	3,657	3,600
Paints and Colours in Paste Form .....cwt.	32,516	24,294	62,949	45,701
Paints and Enamels prepared (including Ready Mixed) .....cwt.	42,816	32,814	134,173	99,995
All Other Sorts .... ,,	48,207	33,056	88,558	61,053
Total..... ,,	128,351	96,913	290,611	209,185
Total of Chemicals, Drugs, Dyes, and Colours ....value	—	—	2,011,080	1,396,693
Re-exports				
CHEMICAL MANUFACTURES AND PRODUCTS—				
Acid, Tartaric .....cwt.	198	73	1,369	484
Borax ..... ,,	1,800	40	1,175	25
Coal Tar Products, not otherwise specified value	—	—	55	5
POTASSIUM COMPOUNDS—				
Nitrate (Saltpetre) cwt.	53	2,582	64	2,302
SODIUM COMPOUNDS—				
Nitrate ..... ,,	243	1,188	120	601
Tartar, Cream of .. ,,	269	248	1,462	1,239
All Other Sorts ...value	—	—	197,440	8,854
DRUGS, MEDICINES, AND MEDICINAL PREPARATIONS—				
Quinine and Quinine Salts .....oz.	5,051	7,936	610	951
Bark Cinchona, Bark Peruvian, etc.) ..cwt.	397	320	5,069	2,422
All Other Sorts .....value	—	—	26,166	20,331
DYES AND DYE-STUFFS—				
Extracts for dyeing—				
Cutch .....cwt.	1,573	1,147	2,427	1,786
All Other Sorts .. ,,	184	139	776	850
Indigo, Natural.... ,,	11	—	262	—
Extracts for tanning ,,	1,371	1,490	1,554	1,809
PAINTERS' COLOURS AND MATERIALS.....cwt.	945	753	4,239	1,568
Total of Chemicals, Drugs, Dyes and Colours ...value	—	—	243,047	43,421

Chemical Engineering Group Annual General Meeting

THE twelfth annual general meeting of the Chemical Engineering Group will be held on Friday, April 24, at the Waldorf Hotel, Aldwych, London. The formal business meeting will take place at 6.45 p.m., after which dinner will be served at 7.15 for 7.30 p.m. In view of the approaching Jubilee Celebrations of the Society, it has been decided to make this annual meeting of more importance than the usual rather domestic gathering. The principal feature of the after-dinner programme will be an address by Sir Richard Gregory, Bart., on "Science in Industry."

A number of distinguished guests have accepted invitations to be present, including Dr. H. Levinstein, Chairman of Council of the Society, Sir Frederic Nathan, Sir Robert Robertson, Dr. E. F. Armstrong, Dr. H. J. Bush, Mr. W. A. S. Calder, Dr. R. T. Colgate, Mr. H. J. Pooley, and Mr. J. Arthur Reavell.

Heat Treatment of Hydrocarbons

Paraffins and Olefines

A MEETING of the Manchester Section of the Society of Chemical Industry was held in Manchester on Friday, April 10, Dr. R. H. Pickard presiding. A lecture on "The Present Position of the Thermal Decomposition of the Lower Hydrocarbons," was delivered by Dr. A. E. Dunstan, F.I.C., chief chemist to the Anglo-Persian Oil Co.

Dr. Dunstan said that the possibility of producing motor spirit of high "anti-knock" value from natural gas or "cracker" gases by heat treatment had recently received considerable attention, both in this country and abroad. By the application of pyrolysis to both natural and cracker-gas it was possible to produce aromatic hydrocarbons. As an alternative, with cracker gases, use might be made of the tendency of the olefine hydrocarbons to polymerise or condense, with the production of low-boiling liquid hydrocarbons. In order to apply this process of polymerisation to the paraffin hydrocarbons it was necessary to convert these into olefines. This might be done by mild pyrolysis.

All the paraffin hydrocarbons when subjected to conditions of pyrolysis produced aromatic hydrocarbons, but several factors rendered the transference to large scale work difficult. Among the considerations involved were the necessity for high temperatures (800-1050° C.), and the need for expensive special steels or fragile refractory material to withstand such conditions. The need for operation at ordinary pressures, for instance, was an obvious conclusion from the observation that paraffins increased in volume when pyrolysed, and was borne out by experience with ethane at pressures up to 150 lb. per sq. in., when the best conversion was 12·4 per cent. as against 22 per cent. at atmospheric pressure. Another point was the comparatively low yield of aromatic liquids and spirit. The conversion was 22 to 27 per cent. of the paraffin passed and of this, approximately only 50 per cent. boiled below 170° C. There was also an apparently inevitable deposition of carbon.

In the pyrolysis of the olefines conditions were somewhat different. The temperature range was lower (700 to 850° C.) and the percentage conversion was higher, being 36 to 40 per cent. of the olefine passed. The liquid produced was similar to that obtained with the paraffins. It was necessary to consider the influence of pressure on the pyrolysis of the olefines, with the idea of increasing the capacity of any plant required, and possibly reducing the working temperature and improving the yields. With ethylene at pressures up to 150 lb. per sq. in., it was found that the working temperature might be reduced about 100° C., namely, to 700° C., or lower, but the conversion was 35 per cent. and the yield of 36·1 per cent. obtained at atmospheric pressure had not been exceeded. Under operating conditions at 150 lb. per sq. in. pressure, 575° C. appeared to be the approximate temperature separating polymerisation from pyrolysis with ethylene.

For the formation of olefines from the paraffins, the pressure used must be atmospheric or even reduced, since the production of olefines was accompanied by an increase in volume. From the meagre information at present available, it would appear that mild pyrolysis was a promising method for the production of olefines from paraffins. If this be possible, the application of polymerisation to gases such as natural gases, consisting chiefly of paraffins, became a reasonable process.

In the process of polymerisation as applied to the olefines the change involved a reduction in volume. The temperature was lower than that required for pyrolysis (up to 550° C.) and this eliminated the necessity for expensive steels unless they were required for other reasons. It had also been found that pressure was an advantage and that it assisted in reducing the size of the plant required. The liquids obtained were not aromatic and the yields approached the theoretical yield. The recorded 92 per cent. conversion was not a maximum. Of the total liquid 86 per cent. boiled below 200° C. and the spirit had an engine test five-sixths that of benzene. Trouble with carbon was negligible under suitable conditions, but the use of all materials accelerating the deposition of carbon must be avoided. At high pressures and temperatures violent decomposition (resulting in a copious deposition of carbon) might occur, but this could be avoided by careful adjustment of the conditions and the use of a suitable surface material.

Indian Chemical Notes

(From Our Indian Correspondent.)

AT the beginning of the present year the Indian Central Cotton Committee suffered a serious loss when Dr. A. James Turner, Director of the Technological Laboratory, left Bombay to take up an important appointment in Manchester. During the seven short years of his connection with the Committee, Dr. Turner has built up a research laboratory which is at present the only one of its kind in the world, and a testimony to its value is the fact that it is being copied elsewhere. He leaves behind him a Research Institute which has already earned for itself a world-wide reputation and which, apart from its value to the cotton breeder, is becoming of increasing value to the trade.

Air Seasoning

The research on timber seasoning of the Dehra Dun Forest Research Institute was concentrated during the year on air seasoning. In India, owing to the diversity of the species of timbers and the absence of large scale woodworking industries, methods of natural seasoning should find far greater application than the artificial method of drying. During the year an experiment to determine the effect of water soaking on planks of laurel (*terminalia tomentosa*) was started and is now in progress. There appears to be a conflict of opinions among experts as to the effect of water immersion on the seasoning properties of timber. Data available on the subject are meagre, and as the method does undoubtedly reduce the amount of checking to some extent, especially in the case of the more refractory Indian timbers, an investigation on these lines is sure to be profitable.

Turpentine

The Bareilly Factory in U.P. which manufactures turpentine has been finding some difficulty in finding a market for their III. quality turpentine, and in consequence large stocks were accumulating. In the Institute, an attempt was made by the bio-chemist to make use of this turpentine in the preparation of an insect prevention paint, but it was found that oxidation took place too rapidly, with the result that the paint hardened in a short time, making it unsuitable for the purpose. Arrangements have now been made to study this turpentine and the pressure distillate, in the hope that it may be possible to obtain some product which will prove of commercial value.

Tar for Roads

Experiments were undertaken to discover whether it would be possible to produce from chir tar, a tar which would be a suitable substitute for "Spramex" for tarring roads. The physical properties of "Spramex" are being analysed, and with this knowledge attempts will be made to drive off the lighter fractions of the chir tar and so to produce a tar which will approach "Spramex" sufficiently closely to make it a suitable substitute. It may prove necessary to mix some petroleum residues with the chir tar in order to make it similar to "Spramex," but if this is done careful consideration will have to be paid to the cost of preparation as the margin of profit is small.

Chaulmugra Oil

The work on the various chaulmugra trees in Burma was continued, and seed was dispatched to various parts of the world. Professor D. H. Peacock, of Rangoon University, is carrying out chemical analyses of these seeds. The chief chaulmugra tree of Burma is Taraktegenos Kurzii, which is much the commonest species. The full chemical and botanical results are under preparation and will be published shortly.

A Non-Poisonous Disinfectant

The Chemical Products Co., Burma, has been able to produce a non-poisonous disinfectant which has been placed on the market under the name of "Chlorone," and in a stronger form in the name of "C.P.L." It has to be remembered that the local consumption of disinfectants is considerable. On account of the success of this product, and for other reasons also, the company's prospects are said to be on the whole good. Sales of carbon dioxide have not reached the capacity of the plant, and a more extended use of it can be confidently anticipated. The low price of rubber may cause a reduction in the consumption of acetic acid in Burma, but there cannot be a permanent reduction in output.

Modern Fractional Distillation

Developments in the Petroleum Industry

IN the course of his paper on "Recent Developments in Fractional Distillation," read before the Institution of Petroleum Technologists on Tuesday, April 14, Mr. C. H. S. Edmond, M.Am.Pet.Inst., said that the use of modern tube-stills and fractionating towers has permitted a reduction in operating costs of 50 to 60 per cent., as compared with the older type of shell-still units. The refiner has been faced with a definite and insistent demand for not only a better product, but also for a consistent grade of product, necessitating improved equipment and methods of manufacture.

The advantages of distillation under vacuum have been recognised for many years, but the commercial application of vacuum to the processing of petroleum oils is relatively new. Crude petroleum having a paraffin base or having a definite asphalt content receives elaborate treatment. Such crudes are first processed by the single flash system under atmospheric pressure to yield such products as gasoline, naphtha, kerosene, light gas oil, together with reduced crude as a residue from this atmospheric operation. This reduced crude is then heated further in a tube still and flashed into a tower maintained under relatively high vacuum, whereby heavy gas oil, pressable wax distillate and cylinder stock are taken off as distillate products. The effect of the vacuum is to minimise decomposition and cracking of the oil, so that by this system it has been found commercially possible to process lower-grade crudes which had not been previously considered as a profitable source of lubricating oil.

In a modern tube-still designed for flash distillation purposes, the charge is held only momentarily at the highest temperature before being discharged into the flash chamber. There are two distinct banks of tubes, which are so arranged in the furnace that the oil enters the tubes which are set where they come into contact with the cooled combustion gases. These tubes are designed to transmit the heat from gas to oil at high efficiency, resulting in a difference of less than 200° F. between the oil entering and the gas leaving the furnace. As the oil flows upwards counter-current to the hot gases, the temperature gradient between gas and oil increases towards the top of this bank which is wholly separated from the combustion chamber by an air-cooled wall. Turbulent flow of the oil through the tubes is maintained in order to avoid local overheating.

Bubble tray fractionating towers are now almost universally used for the separation of the homogeneous vapour-liquid mixtures into specification distillate and residual products. In effect the tower unit embodies an evaporator or flash chamber section into which the mixture of oil in liquid and vapour form is flashed. The liquid portion descends over a number of bubble trays, receiving counter-currently from below the necessary quantity of superheated steam to strip it to a desired specification implied by flash point, viscosity, and similar physical characteristics, after which it is continuously withdrawn from the base of the tower by a hot oil pump. The vaporised portion of the charge then rises through a number of bubble trays upon which it contacts counter-currently with a descending stream of liquid reflux, which is progressively vaporised by the ascending vapour, the heavier ends of which are condensed and at certain points in the tower taken out as liquid side streams.

Although a large proportion of heat is expended in the bubble fractionating tower, there is in the modern distilling unit recovery of heat almost to a point above which furnace efficiency would be impaired. Latent heat is recovered from the overhead stream only, while from the tower side streams sensible heat only is recovered. The use of heat exchangers results not only in a lower fuel consumption, but also considerably reduces the quantity of water required for condensing and cooling the products. Heat may be recovered from the overhead vapour, liquid side stream, and residue products, the location of heat exchangers being determined by the amount of heat available in the various streams.

Choice of materials is an important factor in design, and depends principally on operating temperatures and the nature of the fluids. For high temperature work mild steel and cast steel have proved very satisfactory, and corrosion is greatly minimised by even distribution of the fluid and the avoidance of stagnant sections.

Bitumens and their Use in Paints

Need for More Investigation

At the monthly meeting of the Oil and Colour Chemists' Association in London on Thursday, April 9, Mr. W. N. Bowran read a paper on "Bitumens and their Use in Paints." Mr. Noel Heaton (President of the Association) was in the chair.

Mr. Bowran said that it was only in recent years that serious efforts had been made to produce coloured paints on a genuine bitumen base. Despite much criticism, these now occupied a distinct and important place among anti-corrosive preparations. A great deal of the criticism against these paints was due to the difficulty of securing any definite data with regard to them. Reports on weathering tests in all parts of the world were frequently published but they were of little value because the usual description of "bituminous composition" had not been clearly defined. There was not only the need for a clearer understanding of what is meant by "bitumen paint," but also for some system whereby such paints may be classified to ensure correct comparison.

Bitumens of use to the paint manufacturer were (*a*) pure native asphalts (*e.g.*, bermudez, as found in Venezuela); (*b*) pure native asphaltites (*e.g.*, gilsonite, manjak or glance pitch and grahamite); (*c*) residual asphalts (*e.g.*, products of the distillation of asphaltic base petroleum). Of these the asphaltites had been found to be the least affected by weathering.

Resistance to Water Absorption

Giving details of tests made on varnishes of widely dissimilar types, using tinned iron plates to imitate as closely as possible the conditions met with in practical work, the author said that the plates were dipped in the varnishes and withdrawn at the rate of one-tenth inch per second, to equal the ordinary rate of flow of varnish and to prevent a wrinkled surface. The plates were then stoved in a slow current of air at 120° F. until constant in weight. Among the varnishes examined were the following:—

(*a*) Carriage varnish: A long oil-copal mixing from a reputable firm, approximate composition—copal 34 per cent., linseed oil 53 per cent., tung oil 13 per cent.

(*b*) Boat varnish; composed of equal parts ester gum, linseed oil and tung oil.

(*c*) Black japan; bitumen 58 per cent., linseed oil 29 per cent., tung oil 13 per cent.

(*d*) Bitumen varnish: bitumen 34 per cent., linseed oil 53 per cent., tung oil 13 per cent. It will be seen that this follows the mixing for the carriage varnish (*a*), with the copal replaced by bitumen.

These experiments indicated that the bitumens are thoroughly resistant to water, the thickness of the films having an influence on the absorption. The replacement of gum in (*a*) by bitumen in (*d*), for instance, revealed a striking decrease in absorption, from 10·3 per cent. to 1·9 per cent. in the first three days. The result from the boat varnish (*b*) was disappointing, due to the high linseed oil content in the absence of bitumen, but the result from the black japan (*c*) was surprisingly good.

Ingredients and Manufacture

The brittle nature of some of the bitumens used in this country, and the consequent troubles which arise from them, was commented upon. The blown and residual bitumens are elastic to a degree and are admirable for roofing compositions where the material is applied in very thin layers and where the more volatile constituents are bound by a hardening surface within a few hours of application. The native asphalts and asphaltites, however, are too hard to be used without the incorporation of some body or bodies which will impart this property to the mixture. Linseed oil and tung oil are blended singly or together with bitumen for this purpose, and fatty acid pitches are used in large quantities in air-drying compositions; for stoving varnishes, mineral oils serve the same purpose. Blown bitumens have been found to be particularly useful for paints which are to be applied under conditions of vibration or extreme cold, but the general question of elasticity of bitumen paints must be considered in relation to the particular circumstances in which the paints are used.

In the heating process associated with the manufacture of all bitumen paints and varnishes, anything in the nature of destructive heating must be avoided. Over-heating causes changes in chemical constitution to proceed rapidly giving an increased "free carbon" content, which results in drying problems and "dirtiness" of the film. The main points to be borne in mind in connection with the heating process are (*a*) the heat should be applied gently and only slightly increased; (*b*) the lowest melting point ingredient, or the oils, should be treated first; (*c*) the temperature should never exceed 450° F., or 500° F., at the most; (*d*) no heat treatment should be prolonged beyond the minimum time necessary for any process; (*e*) constant stirring is necessary.

Effects of the Bitumen on the Oil

Among the difficulties of the paint manufacturer in preparing mediums of low bitumen content is the retarding influence of the bitumen upon the oxidation of the oil. The greatest difficulties are encountered when oil is in excess for no hardening can possibly result from the bitumens and the stoppage of the oxidation then introduces serious troubles. The residual asphalts are the worst offenders in this respect. The native asphalts come next, and their influence depends upon the amount of "free carbon" they contain. The asphaltenes give the least trouble. At the moment it is difficult to improve upon the use of lead and cobalt as driers, but the quantity required is determined by the type and proportion of bitumen present. This is one of the first difficulties to be dealt with by anyone seeking the preparation of a satisfactory coloured bitumen paint. White spirit is by far the most common solvent in use; aromatic hydrocarbons are superior in solvent power and they would be in much greater demand for this purpose but for their pronounced physiological action. Petroleum solvent naphtha is useful, but turpentine only is used with paints of low bitumen content where the harder gums are present to some degree.

Speaking of pigments in coloured bitumen paints, the author pointed out that if pigments usually regarded as adulterants (such as barytes and whiting) are present to any extent, the paint in question should be regarded as not being a genuine bitumen paint or as not containing the highest possible amount of bitumen. Those pigments that are lowest in density are the most satisfactory because, owing to the increased percentage of thinners, there is a greater tendency for settling to take place.

Discussion

Mr. C. F. Jackson said that one point which appealed to him was the extent to which gilsonite predominates as a constituent in bituminous paints. This indicated the necessity for finding a substitute for gilsonite, because the price was fairly high and he did not know that the supplies were inexhaustible. He had tried to make substitutes but they had been consistently turned down by the paint trade.

Mr. H. D. Bradford agreed with the author that there is still a great deal to be learned about bitumen. Some time ago Abrahams referred to the use of blown bitumen for the manufacture of paints, but there were quite a number of other people who would not look at blown bitumen but insisted on the ordinary straight run or steam distilled product. Gilsonite had been used for many years. One of the earliest bituminous paints was one patented in America some 30 years ago, making use of Barbados manjak, with carbon disulphide as solvent. How any elasticity was given to that paint he did not know, but it was one which was used for many years afterwards.

Mr. R. A. Bennett remarked that the amount of driers necessary in coloured bitumen paints was larger than in the case of ordinary paints, but seemed to suggest that the coloured bitumen paint contained something inferior to the ordinary oil paint. A point mentioned in the paper with regard to bitumen paints was equally true of oil paints; in both cases the rate of drying has a great influence on the ultimate water resistance. That was not sufficiently realised in this country, for where bitumen paints did not show up so well under accelerated weathering tests was it not due to the fact that the bitumen dried quickly under the influence of the acceler-

ated test as compared with the more normal conditions of ordinary outdoor exposure ?

Mr. T. Hedley Barry, referring to the apparently overwhelming demand for gilsonite compared with other bitumens, said that some years ago he had a great deal to do with bitumens of various types for making up straight spirit varnishes and had been impressed with the great difference between the general physical properties of the bitumens and gilsonite. When drying films of bitumens, the films remained in a pasty state for some time whereas pure gilsonite dried very quickly to a hard film. The colloidal properties of these various bitumens was a matter of great interest and in that respect the peculiarities of gilsonite might be worth very close investigation. In connection with the blending of various resins with gilsonite, it occurred to him that as the chief advantage of the bitumens is their chemical inertness, generally speaking, the coumarone type of resin might be of interest in this connection. As regards the retardation of the drying action, the suggestion that sulphur might have something to do with it was worth investigation. Could the author say how far the various bitumens differ in sulphur content and the form in which the sulphur is present ?

The President said one rather important practical point not mentioned by the author was the difficulty of subsequent decoration of a bitumen painted surface. That often arose in the case of buildings which, according to by-laws, had to be treated with bitumen compositions, but which did not, as a consequence, have a very pleasing appearance. The after decoration was then a matter of great difficulty, because the bitumen did not change after it was applied and remained more or less soluble in the oil. If any form of oil paint was applied, the bitumen bled through and the final appearance was unsatisfactory. For that reason he did not know how the author avoided the same difficulty when he spoke of the use of bitumen paint for a priming coat, perhaps he could enlarge upon that. The author had made it quite clear where he drew the line as to what is bitumen ; it appeared that he excluded any compositions which were made with petroleum pitches or coal tar pitches of any kind. At the same time, a good many so-called bitumen paints were made from substances which the author had excluded.

The Author, replying to the discussion, said that considerable work had been done with regard to substitutes for bitumen and in connection with the use of coumarone resins. A great deal could be said about that, but he did not think that the present moment was the right occasion for dealing with it, as this paper was intended to deal with the standard products available. It was quite true that there are a considerable number of paints on the market in which, by their names, one would expect to find considerable quantities of bitumen, but in fact there was none at all. Blown bitumens were very much lower in ductility than the residual asphalts, but for the purpose of a paint film they possessed wonderful elasticity, and there was a difference between elasticity and ductility. A blown bitumen at a temperature of 200° F. possessed a great deal of elasticity and quite sufficient for ordinary temperature changes. As to painting over bitumen paints with ordinary oil paints, that could be done if two coats of aluminium paint are applied over the bitumen paint.

New Chemical Factory in Ireland

Mr. Robert H. F. Finlay, a director of Alexander Finlay, Ltd., soap manufacturers, of Belfast, is developing plans for the establishment of a factory on the site of the disused salt mines at Eden, near Carrickfergus. It is intended to produce soda, bleaching powder and other chemicals for which common salt can be used as raw material. Part of the plant from the dismantled Sunsheen Artificial Silk Works, near Ballymena, is being utilised.

Use for Arsenic Pentoxide in South Africa

The Department of Agriculture of the Union of South Africa is recommending the use of arsenic pentoxide for the destruction of the prickly pear, which is a serious menace to agriculture. A solution containing 3 lb. of arsenic pentoxide to 1 gallon of water is suggested for use, this solution being distributed by means of an atomiser. Further particulars are obtainable from Science Bulletin No. 93, which is issued by the above department.

Research at Mellon Institute

Noteworthy Results from Fellowships

In his eighteenth annual report to the board of trustees of Mellon Institute, the Director (Dr. E. R. Weidlein) has summarised the activities of the institution during the fiscal year ended February 28, 1931. The sum of $805,204 was contributed to the Institute by the industrial fellowship donors in support of scientific research. The total amount of money appropriated by companies and associations to the Institute for the twenty years ended February 28, 1931, was $7,554,477.

During the year 76 industrial fellowships—22 multiple fellowships and 54 individual fellowships—were in operation. Thirty-one fellowships have been in operation for five years or more, and of this number 18 have concluded more than ten years of work. Three, and possibly four, new fellowships will begin operations during the early part of the present fiscal year, as soon as laboratory space is available.

According to the report, particularly noteworthy results have come from the following fellowships : Air pollution, by-product coke, face brick, fertiliser, heat-insulation, iodine, nitrogenous resins, organic synthesis, refractories, sleep and utensil. Twelve fellowships completed their research programmes, namely : Chrome ore, insulating lumber, portland cement, composite glass, yeast, inhibitor, steel treatment, rock products, roofing, fatty acids (uses), oxygen, and face brick. Thirteen new fellowships were added to the Institute's roll during the fiscal year, as follows : Safety fuse, plastic composition, bread, cottonseed products, hydro-engineering, abrasives, newsprint, sugar, fatty acids (synthesis), shoes, optical glass, commodity standards, and tire bead.

The Department of Research in Pure Chemistry had a productive year, and two fellows were added to the staff. Twenty-two investigational reports have been published since the establishment of this department in 1924. Among the subjects that are receiving research attention are the chemistry of marine plants, cherry gum, gum arabic, and quince-seed mucilage, and the properties of the sugar acids. The publications by members of the Institute during the calendar year 1930 included 1 book, 5 bulletins, 45 research reports, and 44 other papers. Sixteen U.S. patents and 13 foreign patents were issued to fellowship incumbents. The commencement of the construction of the Institute's new home is referred to as the most important event during the year. The erection of this edifice will require about two years' time, and the completed building will furnish the Institute with the means for expanding greatly its research facilities and activities in both pure and applied science.

Iron and Steel Institute

At the annual meeting of the Iron and Steel Institute, to be held at the Institution of Civil Engineers, Great George Street, Westminster, May 7-8, the following papers will be presented : " First Report on the Corrosion of Iron and Steel," being a report by a Joint Committee of the Iron and Steel Institute and the National Federation of Iron and Steel Manufacturers to the Iron and Steel Industrial Research Council ; C. O. Bannister and W. D. Jones, " The Sub-Crystalline Structure of Ferrite " ; Sir H. C. H. Carpenter, F.R.S., and J. M. Robertson, " The Formation of Ferrite from Austenite " ; J. H. Chesters and W. J. Rees, " Refractory Materials for the Induction Furnace " ; O. Cromberg, " Production Economy in Iron and Steel Works " ; E. C. Evans, L. Reeve and M. A. Vernon, " Blast-Furnace Data and their Correlation—Part II " ; J. Newton Friend and W. West, " The Resistance of Copper-Nickel Steels to Sea Action " ; V. Harbord, " The Basic Process. Some Considerations of its Possibilities in England " ; C. H. M. Jenkins and H. J. Tapsell, " Some Alloys for Use at High Temperatures " ; A. L. Norbury and E. Morgan, " The Effect of Carbon and Silicon on the Growth and Scaling of Grey Cast Iron " ; E. Ohman, " X-Ray Investigations on the Structure of Hardened Steel " ; L. B. Pfeil, " The Constitution of Scale " ; G. Phragmen, " X-Ray Investigation of Certain Nickel Steels of Low Thermal Expansion " ; A. Robinson, " The Melting Shop of the Appleby Iron Co., Ltd." ; W. Rosenhain, F.R.S., and A. J. Murphy, " Accelerated Cracking of Mild Steel (Boiler Plate) under Repeated Bending."

Treatment of Fruit by Borax

U.S. Patent Held Invalid

THE Supreme Court of the United States has declared that U.S. patent No. 1,529,461 (Brogdex and Trowbridge) relating to the treatment of citrus fruit by borax or other boric acid compounds, is invalid. The holding of the Court in this suit between American Fruit Growers, Inc., and the Brogdex Co., has reversed the decision of the two lower courts, which held the claims of the patent to be valid and infringed.

The invention disclosed the utility of applying a borax solution to fruit and to vegetables, but particularly to oranges, the latter being especially subject to attack and destruction by blue mould. The application of compounds of boron, as exemplified by borax in the form of its aqueous solution, to the rind of the citrus fruit was claimed to reduce and prevent the development of blue mould. The mould-retarding agent was simply added to the wash water in which the fruit was soaked. Paraffin or some other waxy material was subsequently spread over the surface as a thin protecting film.

The process claims were held invalid by the court for the reason that S. Bishop, in a patent issued over twenty years previously, had disclosed the treatment of articles of food, such as fruit, vegetables, and eggs, by boracic acid solution to prevent their usual rapid decay and deterioration.

This suit has been looked upon as one of the most important in the United States chemical industry within recent years, because of the wide extent which treatment of citrus fruits for marketing has attained and the consequent financial investments involved. Losses from blue mould in shipments of oranges during the last two years have been estimated at $1,000,000 annually.

United States Helium Output

THE United States Government's helium plant, near Amarillo, Texas, designed, built and operated by the Bureau of Mines, produced 9,801,060 cubic feet of helium in the year ended June 30, 1930. This was the first fiscal year of operation after the plant was constructed. Although the plant operated only ten months of the fiscal year, having been closed in December, 1929, and February, 1930, for lack of orders for helium, the production was the largest ever turned out by the Government in one fiscal year, being about 800,000 cubic feet greater than the largest fiscal year's production of the Government's Fort Worth helium plant, which formerly supplied helium used by the Army and Navy. Even with this production the plant was operated at only a fraction of its present capacity, as it is capable of a production of 24,000,000 cubic feet per year. Its output is limited by the demand of the Army and Navy for helium rather than by its capacity to produce. In the plant the helium is extracted by cooling natural gas under pressure to a very low temperature at which all of its constituents, except the helium, are liquefied. After the helium has been drawn off, the other constituents are returned to the gaseous state by warming them up to atmospheric temperature. Each cubic foot of natural gas that enters the plant is cooled from atmospheric temperature to about 300° F. below zero and returned to atmospheric temperature in less than one minute. The gas from which the helium has been extracted is discharged into a pipe line, with its heating value improved by the extraction of the helium, and is sold for use as domestic adn industrial fuel.

Acton Precious Metals Refinery

ON Thursday, April 23, Acton will be the scene of an Empire Trade gathering emphasising the enormous precious metal wealth of the British Empire, especially that of Canada. The occasion is the opening of the extensions to the Acton Precious Metals Refinery. The opening ceremony will be followed by a luncheon at which Lord Weir will preside. The Rt. Hon. J. H. Thomas, Secretary of State for the Dominions, and the Hon. G. H. Ferguson, High Commissioner for Canada, will be present. Industry will be represented by Sir Harry McGowan (chairman, Imperial Chemical Industries), Lord Melchett, Mr. R. C. Stanley (president, International Nickel Co., Canada), and Mr. D. O. Evans; science, by Sir Harold Carpenter (professor of metallurgy, Royal School of Mines), Dr. Rosenhain (National Physical Laboratory), and Dr. F. W. Smith (chief assayer to the Royal Mint).

Society of Chemical Industry

Birmingham and Midland Section

ACCORDING to the report of the honorary secretary (Mr. George King), submitted at the annual meeting of the Birmingham and Midland section of the Society of Chemical Industry on Tuesday, April 14, the outstanding event of the past session was the annual meeting of the society in Birmingham in July. Although many new members resident in the Midlands joined the society during the period of the annual meeting, there had been a reduction in the total number of members of the section, due to rearrangement of the Midland area, whereby Derby and district is included in the Nottingham section. The membership of the Birmingham section is now 208.

Recognising the value of co-operation among scientific societies, the committee had invited members of the Chemical Society and of the Institute of Chemistry to attend the meetings of their section, and had given their support to the activities of the Midland Chemists' Committee.

Dr. E. D. Mason was re-elected chairman of the section and Mr. George King, honorary secretary. The meeting was followed by a discussion on "A new method for testing agar and gelatine jellies," by Mr. H. E. Lockwood and Mr. R. S. Hayes. A paper on "Some modern methods of sewage disposal" was read by Mr. F. R. O'Shaughnessy.

Production and Export of Tin

AGREEMENT was reached at a recent meeting in London on the international scheme to regulate the production and export of tin. The scheme, which will be administered by an international committee representing the Governments of Bolivia, Malaya, the Netherlands, East Indies and Nigeria, will have effect from March 1, 1931, and will remain in force two years. Its object is to secure a fair and reasonable equilibrium between production and consumption with the view of preventing repeated and severe oscillations of prices. The basic world tonnage under the scheme was agreed at 145,000 tons a year. The initial quotas are as follows:—Malaya, 53,853 tons; Bolivia, 34,260 tons; Netherlands, East Indies, 29,910 tons; Nigeria, 7,750 tons. Invariable percentages based on these initial quotas were agreed for each country as the ratios applicable to all alterations of the basic tonnage. The initial quotas are to remain fixed for not less than six months.

Dyeing Trade Wages

REPRESENTATIVES of workers in Yorkshire, Lancashire Cheshire and Derbyshire met at a full conference of Joint Dyers Executive Committees in Manchester on Saturday, April 11, to discuss whether or not they would accept the basis of the proposed wage reduction which was reached earlier in the week at a conference of representatives of the Allied Association of Bleachers, Dyers, Printers and Finishers and the representatives of the various trade unions concerned. The Joint Dyers Executive Committee agreed to recommend the terms of arrangement for wage reduction to the members of their unions. The results of the union meetings on the question will be known on April 27. The reductions now proposed represent a cut of approximately 6·5 per cent. for time workers and 5·2 per cent. for piece workers. As operatives would have been subject to a reduction of their cost of living wage next month, the net reduction under these proposals will only be about 4·9 per cent., whereas a 15 per cent. reduction was originally demanded by employers.

Portland Cement for Lithuania

H.M. CONSUL at Kovno reports that the Supply Service Department of the Lithuanian Railway Administration is calling for tenders to be presented in Kovno by April 23 for the supply of 3,000 barrels of Portland cement in conformity with the specification laid down by the German Ministry of Communications. Firms desirous of offering cement of British manufacture can obtain further particulars upon application to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. Reference number B.X. 7053 should be quoted.

From Week to Week

A. WANDER AND CO., LTD., manufacturing chemists, London, have sent £5,000 to the Doncaster New Infirmary Building Fund.

MR. R. C. GEDDES, the eldest son of Sir Auckland Geddes, British Ambassador to the United States from 1920 to 1924, is working in a petrol refinery at Martinez (California).

THE Leningrad Chemical Trust has almost completed the first Russian camphor plant at Leningrad. It is to have a capacity of 400 tons of synthetic camphor per annum.

IT IS REPORTED that the plant under construction near Rouen, by the Potassese et Engrais Chimiques, for the production of potassium sulphate and by-products will begin operations in May.

A PLANT for the production of calcium cyanide is under construction at Karakliss, in Russia, at an estimated cost of 8,000,000 roubles. The initial capacity is to be 10,000 tons of cyanamide per annum.

DAMAGE estimated between £10,000 and £20,000 was caused by fire at the dyeworks of Franklands, Ltd., Clayton, near Bradford, on Sunday, April 12. From 70 to 80 employees will be out of work for some time.

PROGRESS in power production is the subject of the annual May lecture to be delivered at the Institute of Metals, May 6, by Mr. William B. Woodhouse, engineer and manager of the Yorkshire Electric Power Co.

THE provisions of the Pharmacy and Poisons Bill at present before Parliament were criticised at the annual meeting of the Animal Medicine Makers' and Allied Traders' Association, held at the Chamber of Commerce, Birmingham, on Tuesday, April 14.

MEMBERS of the Darlington and District Association of Foremen Engineers visited the works of the Chemical and Insulating Co., Ltd., at Darlington, on Saturday, April 11, where magnesia coverings for insulating purposes are manufactured.

THE PRODUCTION OF CALCIUM CARBIDE in Norway during 1928 was 68,363 metric tons; exports were 23,310 metric tons. In 1929, Great Britain was the largest buyer of this commodity, taking 17,667 metric tons; Chile was second with 6,169 tons. Other large buyers were Argentina and British East India.

THE French annual production of sodium silicate is said to be between 40,000 and 50,000 metric tons. Imports of this commodity average only 200 tons annually, while exports are increasing, as indicated by recent data which follows: 4,528 tons in 1928; 4,868 in 1929; and 4,310 tons for the first 11 months of 1930.

AT the annual general meeting of Graesser-Monsanto Chemical Works, Ltd., held on April 8, at the company's registered office, Victoria Station House, London, the following directors were elected for the ensuing year: Dr. L. F. Nickell, Mr. T. P. Berington, Mr. J. F. Queeny, Major T. Knowles, Mr. E. M. Queeny, Dr. H. K. Kippenberg and Dr. C. H. Foott.

RECENT WILLS.—Sir Knowles Edge, of Bolton, head of William Edge and Sons, Ltd., colour manufacturers, has left gross estate of the value of £93,801, with net personalty £87,114.—Sir Arthur John Dorman, Bart., of Grey Towers, Nunthorpe, Yorkshire, chairman of Dorman Long and Co., Ltd., of Middlesbrough, has left gross estate of the value of £132,173.

A NEW CHEMICAL FERTILISER plant is to be established in the port at St. John, New Brunswick (Canada), by a new company established in co-operation by Dutch, English and Canadian interests. The Amsterdamsche Superfosfaatfabriek of Utrecht, Holland, is co-operating in this new enterprise with Messrs. Fison, Packard and Prentice, of Ipswich, and with the International Fertiliser Co., of Quebec.

THE Sixth Biennial Congress of the International Chamber of Commerce, which affiliates representative national committees of leading business organisations in the chief commercial countries of the world, will take place in Washington, U.S.A., May 4–9. Dr. W. H. Coates, LL.B., B.Sc., Ph.D., whose name appears among the British delegates, is representing Imperial Chemical Industries, Ltd.

MR. HENRY SWIRE ELLISON, director of Henry Ellison, Ltd., chemical manufacturers, Cleckheaton, has been nominated for a vacancy on the Spenborough Urban Council.

EXPORTS of glycerin and glycerin lye from Russia during the year ended September 30, 1930, totalled 4,377 metric tons, as compared with 4,344 metric tons during the preceding year.

THE Manchester Municipal College of Technology is inviting applications for the post of lecturer in tinctorial chemistry and dyestuffs. Conditions of the appointment are obtainable from the Registrar.

THE MARRIAGE took place recently between Mr. William Robert Gamble (chief chemist to the Northern Aluminium Co., Ltd., West Bromwich) and Miss E. M. Coope, elder daughter of Mr. H. Coope, of Duffield.

FROM Leghorn, in Italy, it is reported that a new jet of "soffioni" has made its appearance in the district. Soffioni is the name applied locally to volcanic vapours which carry boracic acid.

A NEW CARBIDE FURNACE, reputed to be the largest electric carbide furnace in the southern hemisphere, was recently placed in operation at Witbank, in South Africa. The output is expected to be 1,000 tons per month.

LOW prices prevailing for lead have rendered mining operations in the Upper Weardale district, Durham, so unremunerative that the ore from several mines is being withheld from the market and stored until the outlook improves.

MR. J. H. WELLS, of Swansea, has been appointed president of the South Wales branch of the Society of Chemical Industry in succession to Professor W. J. Jones, University of Wales, Cardiff. Dr. H. B. Watson, Cardiff Technical College, has been elected vice-president.

THE new formaldehyde plant at the Kuskova factory of the Lessokhim Trust in Russia, is said to be working satisfactorily at its rated capacity of 200 tons a month of 40 per cent. formaldehyde solution. A second plant at the same factory is to have an annual capacity of 2,400 tons and is almost ready to start operations.

RESEARCH WORK on cacao and forest soils is in progress at The Imperial College of Tropical Agriculture, Trinidad. According to the Principal's Report which has just been issued, over 800 soil samples have been examined in the laboratory during the past year. Juice or rind oil from several new lime hybrids has also been studied.

CANADA'S IMPORTS OF SALTCAKE during the six months ended September, 1930, totalled 12,764 short tons, compared with 15,472 tons in the corresponding period of 1929. Niter cake imports were 46,000 tons and 6,662 tons respectively. In contrast, glauber salts, which is imported in much smaller quantities, increased from 140 to 298 short tons.

PROFESSOR R. F. HUNTER, D.Sc., Ph.D., D.I.C., Chairman of the Department of Chemistry, Muslim University, Aligarh, has been delegated to represent the University (the seat of learning of the 70 million Mohammedans of India) at the International Congress on the History of Science and Technology, the Faraday Celebrations of the Royal Institution, and the Centenary of the British Association in London.

THE reappointment of the following chairmen of the Australian State committees appointed under the Science and Industry Research Act is announced: New South Wales, Professor Robert Dickie Watt; Victoria, Sir David Orme Masson; Queensland, Professor Henry Caselli Richards; South Australia, Mr. Walter James Young; Western Australia, Mr. Bennett Perry; and Tasmania, Mr. Peter Ernest Keam.

AKTIEBOLAGET SVENSKA METALLVERKEN, at Vasteras, has purchased the sole rights for Sweden to manufacture and sell zinc-white as made by the "smelting" process, which is protected by patent. The construction of the new plant is being speeded up and will probably start manufacturing within a few months. At present Sweden consumes more than 3,000 metric tons of zinc-white annually, all of which is imported.

Obituary

MR. REGINALD E. S. RICHARDSON, a director of John Richardson and Co., manufacturing chemists, Leicester, has died at Hastings.

Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

Abstracts of Accepted Specifications

341,069. DESTRUCTIVE HYDROGENATION. B. R. Goodfellow, L. Patrick and K. Gordon, Norton Hall, The Green, Norton-on-Tees, and Imperial Chemical Industries, Ltd., Millbank, London. Application date, October 4, 1929.

The hydrogen employed in a cyclic process is freed from condensable products, and then cooled to a low temperature, *e.g.*, sufficient to liquefy the nitrogen, to remove methane, ethane and nitrogen. Impure make-up hydrogen may be added before the purification.

341,074. VINYL ETHERS. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, October 7, 1929. Addition to 332,605.

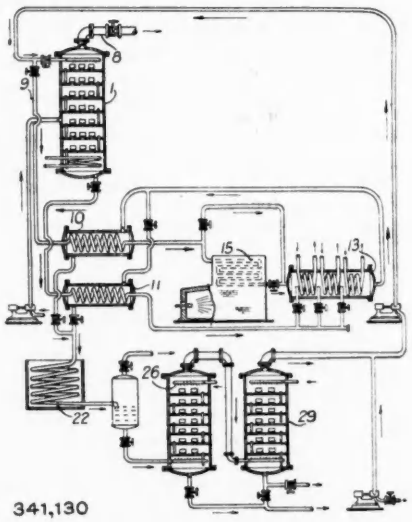
Ethylene or ethylidene dihalides are treated with alcoholates or phenolates, or with alcohols and alkali or alkaline earth metal hydroxides or oxides in the presence of organic diluents, the temperature being 50°-200° C., and the pressure atmospheric pressure or higher pressures. The process may be continuous by passing the reacting materials through a tower and removing the vinyl ether and metal halide as formed. The diluents may be solvents for the reaction components, *e.g.*, aliphatic, cycloaliphatic or aliphatic-aromatic mono- or polyhydric alcohols or phenols. Examples describe the preparation of vinylethyl ether, vinylbutyl ether, and vinyl-*m*-cresyl ether. The products may be used as solvents or for the manufacture of artificial resins.

341,120. DYE INTERMEDIATES. A. Carpmael, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, October 15, 1929.

6-Arylamino-naphthalene-2-sulphonic acids, *e.g.*, 6-phenylamino-naphthalene-2-sulphonic acid, 6-*p*-tolylamino-naphthalene-2-sulphonic acid, and 6-*p*-naphthylamino-naphthalene-2-sulphonic acid, are subjected to caustic alkali fusion under increased pressure to obtain 6-arylamino-2-naphthols.

341,130. OXIDISING HYDROCARBONS. C. Arnold, London. From Standard Oil Development Co., 7, West 10th Street, Wilmington, Del., U.S.A. Application date, October 19, 1929.

A mixture of hydrocarbon and oxygen is passed in a relatively



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cool state into a reaction chamber and heated to reaction temperature by adding hot hydrocarbon, in the presence of carbide-forming metals such as iron, nickel or cobalt, or salts such as borax, clay, silicious or vitreous materials. The process is applicable to methane, ethane, propane, etc., mixtures obtained from natural or refinery gas, also gasoline, kerosene and higher hydrocarbons. Liquid hydrocarbon is passed through a tower 1 in counter-current to air under pressure, so that oxygen is dissolved. The hydrocarbon then passes to a heater 11, where it is heated to 200° C., and then to a chamber 13 heated to 600° C. Part of the hydrocarbon is passed by pipe 9 to preheater 10 and heater 15, and thence to chamber 13. The reaction products pass through preheaters 10, 11 to heat them, and then to a cooler 22. The oxidised products may be removed by solvents such as methyl alcohol, in the towers 26, 29. The preparation of a mixture of ethanol, propanol, butanol, acetaldehyde, acetic acid and acetone from pentane is described.

341,141. REFINING AND RECOVERING OILS; FATTY ACIDS. Metallges, Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, October 31, 1928.

In the alkali purification of oils, the sludge containing soap and neutral oil or fat is treated with solvent to extract the oil, and the residue is acidified and distilled to obtain residual solvent and fatty acid. Examples are given of the treatment of soap obtained from ground nut oil, and the sludge from the treatment with caustic soda of a benzol extract of rape seed.

341,153. APPARATUS FOR REACTIONS WITH HYDROGEN. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, October 30, 1929.

Destructive hydrogenation under pressure is effected in apparatus constructed of or coated with an alloy of zinc with copper, manganese, nickel, iron, cobalt, aluminium or silver. The proportion of hydrogen is increased if the raw materials contain a high proportion of sulphur, so that the mixture contains only 2-3 per cent. of sulphur compounds. The apparatus may also be used for the synthesis of ammonia or methanol.

341,158. FATTY ACID ESTERS. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, October 31, 1929.

Free fatty acids of animal or vegetable fats or oils and polyhydric alcohols are caused to react in the form of mist or vapour in the presence of catalysts such as zinc, tin or magnesium or their oxides or salts. Examples are given of the esterification of the vapour of olive oil fatty acids with glycerine vapour in the presence of steam.

341,160. ALUMINIUM OXIDE AND SULPHIDE. International Patent Corporation, 10, Fredsgaten, Stockholm. International Convention date, November 2, 1928.

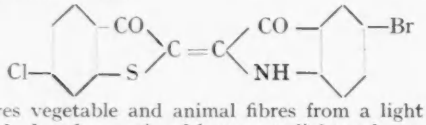
Calcined bauxite is melted with a reducing agent such as coke and a heavy metal sulphide, *eg.*, pyrites or zinc sulphides, the latter being added in the form of lumps which sink through the charge to the metallic layer where any metallic aluminium is converted into the sulphide. The formation of aluminium carbide is thereby avoided.

341,167. ALCOHOLS. H. D. Elkington, London. From Naamlooze Vennootschap de Betaafsche Petroleum Maatschappij, 30, Carel van Bylandtlaan, The Hague. Application date, November 6, 1929.

Olefines are absorbed in sulphuric acid, phosphoric acid or sulphonic acids diluted with the corresponding ammonium salt of the acid. The acid liquid is neutralised wholly or partly with ammonia or a suitable ammonium salt, and after distillation a part of the ammonium salt is crystallised out as a by-product, the mother liquor being employed to dilute a fresh quantity of acid. In an example, butylene is absorbed in sulphuric acid diluted with ammonium sulphate to such a concentration that only isobutylene is absorbed, the mixture is neutralised with aqueous ammonia, and tertiary butyl alcohol distilled with steam. The liquor is cooled to separate the ammonium salt. Other examples are given.

341,224. DYES. A. Carpmael, London. From I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Application date, December 5, 1929.

6-Chloro-3-hydroxy-thionaphthene is condensed with a reactive α-derivative of 5-bromoisatin, *e.g.*, the α-chloride of 5-bromoisatin or 5-bromoisatin-*p*-bromoanilide to obtain a dyestuff of the formula



which dyes vegetable and animal fibres from a light yellow vat grey shades of exceptional fastness to light and exposure.

341,229. DYES. S. Percival, London. From A.C.N.A. Aziende Chimiche Nazionali Associate, 51, Via Torino, Milan, and Belloni and Colli, 78, Cascina Fontecchio, Milan. Application date, December 10, 1929.

Dibenzanthrone or isodibenzanthrone is dissolved or suspended in an inorganic acid diluent having a dehydrating action, *e.g.*, oleum or chlorsulphonic acid, and treated with sulphur chloride to obtain a product giving blue shades of great brilliance and fastness, which may be enhanced by adding boric acid during the reaction. Examples are given.

341,237. CELLULOSE DERIVATIVES. Soc. of Chemical Industry in Basle, Switzerland. International Convention date, December 15, 1928.

Alkali cellulose is treated with carbon bisulphide and alkyl halide or aralkyl halide, *e.g.*, chloracetic ester, benzyl chloride or allyl bromide. It increases considerably in weight but retains its fibrous structure, and is then treated with an organic base such as piperazine, diethyl-ethylenediamine or piperidine. The product has an affinity for acid dyestuffs. Examples are given.

341,299. CALCIUM CYANAMIDE AND CARBAMATE. N. Caro, 97, Hohenzollerndamm, Dahlem, Berlin, and A. R. Frank, 138, Kurfürstendamm, Halensee, Berlin. International Convention date, February 8, 1929.

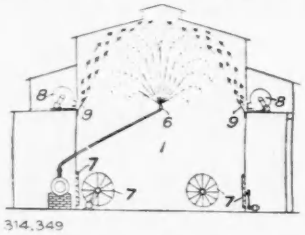
Calcium carbamate, or the product obtained by heating calcium carbamate in nitrogen, is treated with ammonia and carbon dioxide and/or monoxide at 600°-800° C. to obtain a high percentage calcium cyanamide. The gases containing ammonia and carbon dioxide may be converted into ammonium carbonate, from which calcium carbamate is obtained, *e.g.*, by treating calcium oxide, hydroxide, chloride or nitrate with aqueous ammoniacal solutions of ammonium carbamate of low water content, which can be saturated with ammonia and carbon dioxide.

341,302. RECOVERING BENZENE. Klär-und Entphenolungs Ges., 8, Hugo Schultzstrasse, Bochum, Germany. Assignees of Dr. C. Otto and Co. Ges., 9, Christstrasse, Bochum, Germany. International Convention date, February 9, 1929.

Phenols are extracted from water by benzene and residual benzene is recovered by treating with air or steam under pressure.

314,349. SODIUM BISULPHATE. Imperial Chemical Industries, Ltd., Millbank, London. From Grasselli Chemical Co., 1300, Guardian Building, Cleveland, Ohio, U.S.A. Application date, April 4, 1930.

Metal salts such as sodium bisulphate are granulated by spraying upwards in liquid or pasty condition from a nozzle 6 into a chamber 1, the walls and ceiling of which are blanketed



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by air currents from blowers 8 which are directed upward by screens 9. Fans 7 are also provided to provide a peripheral air current around the lower walls.

341,357. DYES. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, April 15, 1929.

Specifications 237,294, 265,232, and 265,964 (see THE CHEMICAL AGE, Vol. XIII, p. 333, and Vol. XVI, pp. 381 and 402) describe the preparation of 1 : 4 : 5 : 8-naphthoylenediarylimidazoles. These are now found to be isomers which can be separated by treating with concentrated sulphuric acid. In an example, 1 : 4 : 5 : 8-naphthalene-tetracarboxylic acid as condensed with *o*-phenylene-diamine, and the product separated into a less soluble constituent dyeing orange shades and a more soluble constituent dyeing bluish red shades.

341,366. ORGANO ARSENIC COMPOUNDS. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, May 6, 1929.

Alkyl arsenic compounds having the formulæ Alkyl—As=S, Alkyl—As$<^{H}_{S.R'}$, or Alkyl—As$<^{S.R_1}_{S.R_2}$ where R, R_1, R_2 represent any organic residues, *e.g.*, the compound obtained by the condensation of methyl arsine oxide with β-thionaphthol, are used for immunizing seed grain.

341,368. CARBON DIOXIDE AND CARBON. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, May 3, 1929.

Carbon monoxide is decomposed at 100 atmospheres pressure and 350° C. in the presence of a nickel catalyst and the carbon dioxide liquefied by cooling to —10° C. at the same pressure. A valuable gas soot is also obtained, and the reaction may be carried out in a continuous manner.

341,386. CALCIUM CARBAMATE. N. Caro, 97, Hohenzollerndamm, Dahlem, Berlin, and A. R. Frank, 138, Kurfürstendamm, Halensee, Berlin. International Convention date, February 8, 1929.

A small quantity of water is saturated at 25° C. under pressure with ammonia and carbon dioxide in the proportion of 2 : 1, and then treated at 20°-40° C. with calcium oxide, hydroxide, chloride or nitrate. The solution is cooled to —10° C. to precipitate calcium carbamate, and the mother liquor is used for a further operation.

Specifications Accepted with Date of Application

345,623. Dyestuffs, Manufacture of. British Alizarine Co., Ltd., C. W. Soutar, and J. Anderson. December 24, 1929.

345,626. Saturated fatty acids, Production of. H. P. Kaufmann. December 27, 1928.

345,629. Installations for carrying out strongly endothermic reactions. Soc. d'Etude et Realisation Dite Ereal. December 27, 1928.

345,631. Double compounds of the acridine series, Manufacture of. A. Carpmael. (*I.G. Farbenindustrie Akt.-Ges.*) December 24, 1929. Addition to 1,846/29.

345,662. Concentrated nitric acid, Manufacture of. Montecatini Soc. General per l'Industria Mineraria ed Agricola. February 27, 1929.

345,664. Cracking Hydrocarbons. Imperial Chemical Industries, Ltd., and W. R. Madel. December 24, 1929.

345,693. Alloy, and articles manufactured therefrom. H. E. Coley, Ltd., and C. J. Newton. January 4, 1930.

345,708. Purifying oils, Methods of. British Thomson-Houston Co., Ltd., January 10, 1929.

345,713. Acetylcholine salts, Preparation of stable solutions of. C. B. Ellis. (*Soc. des Usines Chimiques Rhône-Poulenc.*) January 13, 1930.

345,728. Vat-dyestuffs, Manufacture of. I.G. Farbenindustrie Akt-Ges., and A. G. Bloxam. January 20, 1930. Addition to 298,284.

345,734. Condensation products or intermediate compounds from fish-liver oils, Manufacture of. Imperial Chemical Industries, Ltd., H. M. Bunbury, and W. A. Sexton. January 22, 1930.

345,735. Amino-aryl-thiazole compounds, Manufacture of. A. Carpmael. (*I.G. Farbenindustrie Akt.-Ges.*) January 22, 1930.

345,736. Nickel-iron alloys, Manufacture of. General Electric Co., Ltd., G. C. Marris, G. R. Polgreen, and S. V. Williams. January 22, 1930.

345,738. Purification of mineral oils, tars, their distillation products, and the like. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) January 23, 1930.

345,743. Indigoid dyestuffs, Manufacture of. Soc. of Chemical Industry in Basle. February 2, 1929.

345,800. Cellulose acetate, Manufacture of. Kodak, Ltd. (*Eastman-Kodak Co.*) March 11, 1930.

345,823. Aluminium alloy. Metal Castings, Ltd., and A. H. Nicholson. April 1, 1930.

345,858. Water gas, Apparatus for the production of. J. Y. Johnson and I.G. Farbenindustrie Akt.-Ges. April 29, 1930. Addition to 214,544.

345,873. Sulphuretted hydrogen from aqueous solutions of alkali carbonate, alkali bicarbonate, and alkali hydrosulphide, Process of obtaining. Soc. Anon. Hollando-Belge pour la Fabrikation du Coke. May 13, 1929.

345,891. Aldehyde condensation products, Manufacture of. H. Kappeler. June 12, 1929.

345,902. Beryllium minerals, Process for working up. I.G. Farbenindustrie Akt.-Ges. June 28, 1929.

Applications for Patents

[In the case of applications for patents under the International Convention, the priority date (that is, the original application date abroad which the applicant desires shall be accorded to the patent) is given in brackets, with the name of the country of origin. Specifications of such applications are open to inspection at the Patent Office on the anniversary of the date given in brackets, whether or not they have been accepted.]

Aktiebolaget Filtrum. Liquid-regulating devices. 9,869. April 1. (Sweden, April 4, 1930.)

Aktiebolaget Separator. Centrifugal bowls. 10,051. April 2. (Sweden, April 5, 1930.)

Aktiebolaget Separator. Centrifugal bowls. 10,656. April 10. (Sweden, April 11, 1930.)

—— Centrifugal bowls. 10,657. April 10. (Sweden, April 10, 1930.)

Anticoman Ges. Polymethylenediguanidine compounds. 10,228. April 7.

Aram, E., and Evans, F. E. Retorts for drying, etc., carbonaceous materials. 10,617. April 10.

Arnot, R. Treatment of bituminous residuals. April 2. 10,079.

Bampfylde, J. W., and British Dominions Feralloy, Ltd. Catalytic treatment of organic substances. 9,803. April 1.

Berry, C. R. de. Rubber compositions for manufacture of tyres. 9912. April 1.

Blagden, J. W., and Howards and Sons, Ltd. Purification of menthol, etc. 10,621. April 10.

Blanc, A. C., and Blanc, G. A. Separating iron from alumina. 10,218. April 7. (Italy, April 8, 1930.)

British Bemberg, Ltd. Working up waste liquors of the cuprammonium silk stretch spinning process. 9,727. March 31. (Germany, April 12, 1930.)

British Industrial Solvents, Ltd., and Deutsche Gold-und Silber-Scheideanstalt vorm. Roessler. Production of ketones. 10,515. April 9.

Bruce, F. M., and Mining and Industrial Equipment, Ltd. Filtering apparatus. 10,094. April 2.

Burnett, W. B., Du Pont de Nemours and Co. and Groves, W. W. Manufacture of rubber compositions. 10,089. April 2.

Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of bleaching powder. 9,907. April 1.

Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of neutral solutions suitable for infection. 10,535. April 9.

Chemical Reactions, Ltd., and Deutsche Gold und Silber-Scheideanstalt vorm. Roessler. Catalytic hydrogenation of carbonaceous materials. 10,646. 10,647. April 10.

Coffey, S., Imperial Chemical Industries, Ltd., and Schofield, J. E. Manufacture of NN¹-diarylureas. 9,744. March 31.

Coley, H. E. Reduction of carbonates, etc. 10,009. April 2.

—— Manufacture of alloys. 10,010. April 2.

—— Manufacture of cyanides. 10,011. April 2.

—— Manufacture of metallic nitrides and ammonia. 10,012. April 2.

—— Extraction of gold from arsenical ores. 10,013. April 2.

—— Reduction of sulphates. 10,014 April 2.

Consortium für Elektrochemische Industrie Ges. Production of dichlorethylene. 10,457. April 9. (Germany, May 9, 1930.)

Davidson, A., Imperial Chemical Industries, Ltd., and Reid, W. G. Preparation of stable diazo compounds. 10,370. April 8.

Dreyfus, H. Manufacture of organic compounds. 9,624. March 30.

Drysdale, J. W. W., Drysdale and Co., Ltd. Centrifugal pumps. 9,546. March 30.

Du Pont de Nemours and Co., E. I. Anthraquinone derivatives. 9,569. March 30. (United States, April 29, 1930.)

—— Explosive compositions. 9,859. April 1. (United States, April 3, 1930.)

—— Catalytic process. 9,963. April 2. (United States, April 17, 1930.)

Du Pont de Nemours and Co., E. I., and Reed, J. K. Manufacture of fluorescein. 10,476. April 9.

—— Process of diazotisation, etc. 10,477. April 9.

General Carbonalpha Co. Manufacture of carbon. 9,779. March 31. (France, April 1, 1930.)

Gill, H. A., and Smidth and Co. Rotary filters. 9,598. March 30.

Girault, E. H. Use of halogen derivatives of hydrocarbons. 10,512. April 9. (France, April 9, 1930.)

Goldstein, R. F. Manufacture of carboxylic acid amides. 10,207. April 7.

Groves, W. W., and I.G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs. 9,765, 9,766. March 31.

Groves, W. W. Manufacture of aniline-sulphonic acids. 10,227. April 7. (Germany, April 4, 1930.)

Hildebrandt, G., Klavehn, W., Knoll Akt.-Ges. Chemische Fabriken. Manufacture of laevo-1-phenyl-2-methylamino-propan-1-ol. 10,375. April 8. (Germany, April 8, 1930.)

Hodsman, H. J., and Taylor, A. Manufacture of sulphate of ammonia. 9,542, 9,543. March 30. (May 30, 1930.)

—— and W. C. Holmes and Co., Ltd. Oxidation of ammonia sulphate in aqueous solution. 9,694. March 31.

Hoffmann-La Roche and Co. Akt.-Ges., F. Manufacture of di-substituted carbamic acid esters. 9,576. March 30. (Germany, January 2.)

Hubmajer, M., and I.G. Farbenindustrie Akt.-Ges. Manufacture of homogeneous stable emulsions. 10,034. April 2. (United States, April 11, 1930.)

I.G. Farbenindustrie Akt.-Ges. Arsenic compounds. 10,098. April 2.

—— Manufacture of wetting, etc., agents. 9,879. April 1. (Germany, April 2, 1930.)

—— Wetting, etc., agents. 10,095. April 2. (Germany, April 2, 1930.)

—— Manufacture of monazo-dyestuffs. 10,725. April 11. (Germany, April 11, 1930.)

I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of stable suspensions. 9,581. March 30.

—— Production of metals, etc. 10,059. April 2.

—— Polymerisation products. 10,060. April 2.

—— Hardening rubber materials. 10,061. April 2.

—— Production of ethers, etc., of leuco compounds. 10,062. April 2.

—— Production of valuable conversion products from polymerisation products of butadiene hydrocarbons. 10,287. April 7.

—— Oxidation of hydrocarbons. 10,288. April 7.

—— Production of esters of carboxylic acids. 10,290. April 7.

—— Conversion of hydrocarbons. 10,323. April 8.

—— Apparatus for heat treatment of liquid hydrocarbons. 10,324. April 8.

—— Improving drying oils. 10,628. April 10.

—— Manufacture of acetylene in electric arcs. 10,629. April 10.

—— Manufacture of assistants in textile industries, etc. 10,630. April 10.

—— Manufacture of hydrogen. 10,631. April 10.

Imperial Chemical Industries, Ltd. Manufacture of carboxylic acid amides. 10,207. April 7.

Imperial Chemical Industries, Ltd., and Riley, H. L. Oxidation of ethylenic compounds. 10,369. April 8.

Imperial Chemical Industries, Ltd., and Thomas, J. Production of amino-anthraquinone derivatives. 9,602. March 30.

Lefebure, V. Synthetic resins. 10,099. April 2.

Lilienfeld, L. Manufacture of di- or polyvalent organic compounds. 9,764. March 31.

Loveluck, R. J. Production of amino-anthraquinone derivatives. 9,602. March 30.

Metallages. Akt.-Ges. Purification of fats and oils. 9,659. March 30. (Germany, May 2, 1930.)

Oesterreichische Chemische Werke Ges. Manufacture, storage, and use of hydrogen peroxide. 10,301. April 7. (Austria, April 10, 1930.)

—— Elimination of acids from hydrogen peroxide solutions by electrolysis. 10,386. April 8. (Austria, July 24, 1930.)

—— Apparatus for electrolytic treatment of liquids. 10,714. April 11. (Austria, August 18, 1930.)

Salerni, P. M. Carbonisation of carbonaceous materials. 10,262. April 7.

—— Carbonisation of carbonaceous materials. 10,654. April 10.

Scott, T., and Waters, A. E. Destructive distillation of coal, etc. 10,194. April 7.

Soc. des Etablissements Barbet. Continuous rectification of acetic acid. 9,800. March 31. (France, March 31, 1930.)

Soc. of Chemical Industry in Basle. Manufacture of esters of sulphonated aromatic carboxylic acids. 9,589. March 30. (Switzerland, March 29, 1930.)

Standard-I.G. Co. Hydrogenation of hydrocarbon oils. 10,422. April 9. (United States, April 30, 1930.)

—— Hydrogenation of carbonaceous materials. 10,423. April 9. (United States, May 15, 1930.)

—— Production of hydrocarbon oils from solid carbonaceous material. 10424. April 9. (United States, June 23, 1930.)

Sulman, H. L. Recovery of values from cyanide solutions. 10,508. April 9.

Szidon, W. Manufacture of zinc white. 9,909. 9910. April 1. (France, December 18, 1930.)

Toledo Synthetic Products, Inc., and Triggs, W. W. Manufacture of moulding powders, etc. 10,342, 10,343. April 8.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£18 15s. per ton d/d address U.K. in casks.
ACID CHROMIC.—1s. per lb., less 2½% d/d U.K.
ACID HYDROCHLORIC.—Spot, 3s. 9d. to 6s. carboy d/d, according to purity, strength and locality.
ACID NITRIC, 80° Tw.—Spot, £20 to £25 per ton makers' works, according to district and quality.
ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
AMMONIA (ANHYDROUS).—Spot, 10d. per lb., d/d in cylinders.
AMMONIUM BICHROMATE.—8½d. per lb. d/d U.K.
BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages free.
BLEACHING POWDER, 35/37%.—Spot, £7 19s. per ton d/d station in casks, special terms for contracts.
BORAX, COMMERCIAL.—Crystals, £13 10s. per ton; granulated, £12 10s. per ton; powder, £14 per ton. (Packed in 1 cwt. bags. carriage paid any station in Great Britain. Prices quoted are for one ton lots and upwards).
CALCIUM CHLORIDE (SOLID), 70/75%.—Spot, £4 15s. to £5 5s. per ton d/d station in drums.
CHROMIUM OXIDE.—9d. to 9½d. per lb. according to quantity d/d U.K.
CHROMETAN.—Crystals, 3½d. per lb. Liquor, £18 12s. 6d. per ton d/d U.K.
COPPER SULPHATE.—£25 to £25 10s. per ton.
METHYLATED SPIRIT 61 O.P.—Industrial, 1s. 7d. to 1s. 11d. per gall.; pyridinised industrial, 1s. 9d. to 2s. 1d. per gall.; mineralised, 2s. 8d. to 2s. 11d. per gall. 64 O.P., 1d. extra in all cases. Prices according to quantity.
NICKEL SULPHATE.—£38 per ton d/d.
NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
POTASH CAUSTIC.—£30 to £33 per ton.
POTASSIUM BICHROMATE CRYSTALS AND GRANULAR.—4½d. per lb. nett d/d U.K., discount according to quantity: ground ½d. per lb. extra.
POTASSIUM CHLORATE.—3¾d. per lb. ex-wharf, London, in cwt. kegs.
POTASSIUM CHROMATE.—8½d. per lb. d/d U.K.
SALAMMONIAC.—Firsts lump, spot, £40 17s. 6d. per ton d/d address in barrels. Chloride of ammonia, £37 to £45 per ton, carr. paid.
SALT CAKE, UNGROUND.—Spot, £3 10s. per ton d/d station in bulk.
SODA ASH, 58%.—Spot, £6 per ton, f.o.r. in bags, special terms for contracts.
SODA CAUSTIC, SOLID, 76/77%.—Spot, £14 10s. per ton, d/d station.
SODA CRYSTALS.—Spot, £5 to £5 5s. per ton, d/d station or ex depot in 2-cwt. bags.
SODIUM ACETATE 97/98%.—£21 per ton.
SODIUM BICARBONATE, REFINED.—Spot, £10 10s. per ton d/d station in bags.
SODIUM BICHROMATE CRYSTALS (CAKE AND POWDER)—3½d. per lb. nett d/d U.K., discount according to quantity. Anhydrous ¾d. per lb. extra.
SODIUM BISULPHITE POWDER, 60/62%.—£16 10s. per ton delivered 1-cwt. iron drums for home trade.
SODIUM CHLORATE.—2¾d. per lb.
SODIUM CHROMATE.—3⅝d. per lb. d/d U.K.
SODIUM NITRITE.—Spot, £19 per ton, d/d station in drums.
SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.
SODIUM SILICATE, 140° Tw.—Spot, £8 5s. per ton, d/d station returnable drums.
SODIUM SULPHATE (GLAUBER SALTS).—Spot, £4 2s. 6d. per ton, d/d address in bags.
SODIUM SULPHIDE SOLID, 60/62%.—Spot, £10 5s. per ton, d/d station in drums. Crystals—Spot, £7 10s. per ton, d/d station in returnable casks.
SODIUM SULPHITE, PEA CRYSTALS.—Spot, £13 10s. per ton, d/d station in kegs. Commercial—Spot, £9 per ton, d/d station in bags.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—5d. to 6½d. per lb. Crude 60's 1s. to 1s. 1d. per gall. August/December.
ACID CRESYLIC 99/100.—1s. 9d. to 1s. 10d. per gall. B.P., 3s. 6d. per gall. 97/99.—Refined, 2s. 2d. to 2s. 3d. per gall. Pale, 98%, 1s. 8d to 1s. 9d. Dark, 1s. 4d. to 1s. 4½d.
ANTHRACENE OIL, STRAINED (GREEN OIL).—4½d. to 4¾d. per gall.
BENZOLE.—Prices at works: Crude, 5½d. to 6½d. per gall.; Standard Motor, 1s. to 1s. 1d. per gall. 90%.—1s. 1d. to 1s. 2d. per gall. Pure, 1s. 4d. to 1s 5d. per gall. (The above prices were operative from March 3 last.)
TOLUOLE.—90%, 1s. 8d. per gall. Pure, 1s. 10d. per gall.
XYLOL.—1s. 7d. to 1s 8d. per gall. Pure, 1s. 10d to 1s. 11d. per gall.
CREOSOTE.—Standard specification, for export, 5½d. per gall. f.o.b.; for Home, 4d. per gall. d/d.
NAPHTHA.—Solvent, 90/160, 1s. 3d. per gall. Solvent, 95/160, 1s. 3d. to 1s. 4d. per gall. Solvent, 90/190, 1s. to 1s. 2d. per gall.
NAPHTHALENE.—Purified Crystals, £11 11s. per ton.
PITCH.—Medium soft, 45s. per ton, in bulk at makers' works.
PYRIDINE.—90/140, 3s. 3d. to 3s. 6d. per gall. 90/160, 3s. 3d. to 3s. 6d. per gall. 90/180, 1s. 9d. to 2s. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:—
ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
ACID ANTHRANILIC.—6s. per lb. 100%.
ACID GAMMA.—Spot, 3s. 6d. per lb. 100% d/d buyer's works.
ACID H.—Spot, 2s. 3d. per lb. 100% d/d buyer's works.
ACID NAPHTHIONIC.—1s. 2d. per lb. 100% d/d buyer's works.
ACID NEVILLE AND WINTHER.—Spot, 2s. 6d. per lb. 100% d/d buyer's works.
ACID SULPHANILIC.—Spot, 8½d. per lb. 100% d/d buyer's works.
ANILINE OIL.—Spot, 8½d. per lb., drums extra, d/d buyer's works.
ANILINE SALTS.—Spot, 8½d. per lb. d/d buyer's works, casks free.
BENZALDEHYDE.—Spot, 1s. 8d. per lb., packages extra, d/d buyer's works.
BENZIDINE BASE.—Spot, 2s. 6d. per lb. 100% d/d buyer's works.
BENZOIC ACID.—Spot, 1s. 8½d. per lb. d/d buyer's works.
o-CRESOL 30/31° C.—£2 6s. 5d. per cwt., in 1-ton lots.
m-CRESOL 98/100%.—2s. 9d. per lb., in ton lots.
p-CRESOL 34·5° C.—1s. 9d. per lb., in ton lots.
DICHLORANILINE.—2s. 5d. per lb.
DIMETHYLANILINE.—Spot, 1s. 6d. per lb., packages extra, d/d buyer's works.
DINITROBENZENE.—7½d. per lb.
DINITROCHLORBENZENE.—£74 per ton d/d.
DINITROTOLUENE.—48/50° C., 7d. per lb.; 66/68° C., 7¾d. per lb.
DIPHENYLAMINE.—Spot, 1s. 8d. per lb. d/d buyer s works.
a-NAPHTHOL.—Spot, 1s. 11d. per lb. d/d buyer's works.
B-NAPHTHOL.—Spot, £65 per ton in 1 ton lots, d/d buyer's works.
a-NAPHTHYLAMINE.—Spot, 1s. per lb. d/d buyer's works.
B-NAPHTHYLAMINE.—Spot, 2s. 9d. per lb. d/d buyer's works.
o-NITRANILINE.—5s. 11d. per lb.
m-NITRANILINE.—Spot, 2s. 6d. per lb. d/d buyer's works.
p-NITRANILINE.—Spot, 1s. 8d. per lb. d/d buyer's works.
NITROBENZENE.—Spot, 6½d. per lb., 5-cwt. lots, drums extra, d/d buyer's works.
NITRONAPHTHALENE.—9d. per lb.
R. SALT.—Spot, 2s. per lb. 100% d/d buyer's works.
SODIUM NAPHTHIONATE.—Spot, 1s. 6d. per lb. 100% d/d buyer's works.
o-TOLUIDINE.—Spot, 8d. per lb., drums extra, d/d buyer's works.
p-TOLUIDINE.—Spot, 1s. 6d. per lb. d/d buyer's works.
m-XYLIDINE ACETATE.—3s. 3d. per lb., 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £7 10s. per ton. Grey, £12 to £12 10s. per ton. Liquor, 9d. per gall.
ACETONE.—£60 to £62 10s. per ton.
CHARCOAL.—£6 to £9 per ton, according to grade and locality.
IRON LIQUOR.—10d. to 1s. 4d. per gall.
RED LIQUOR.—9d. per gall.
WOOD CREOSOTE.—1s. 9d. per gall., unrefined.
WOOD NAPHTHA, MISCIBLE.—2s. 11d. per gall. Solvent, 3s. 9d. to 4s. per gall.
WOOD TAR.—£4 to £5 per ton.
BROWN SUGAR OF LEAD.—£37 per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6d. to 1s. 2d. per lb., according to quality; Crimson, 1s. 3d. to 1s. 5d. per lb., according to quality.
ARSENIC SULPHIDE, YELLOW.—1s. 7d. to 1s. 9d. per lb.
BARYTES.—£6 to £7 10s. per ton, according to quality.
CADMIUM SULPHIDE.—4s. 6d. to 5s. per lb.
CARBON BISULPHIDE.—£26 to £28 per ton, according to quantity; drums extra.
CARBON BLACK.—3¼d. to 4⅛d. per lb., ex wharf.
CARBON TETRACHLORIDE.—£40 to £50 per ton, according to quantity. drums extra.
CHROMIUM OXIDE, GREEN.—1s. 2d. per lb.
DIPHENYLGUANIDINE.—2s. 6d. per lb.
INDIARUBBER SUBSTITUTES, WHITE.—4⅝d. to 5⅛d. per lb.; Dark, 4⅛d. to 4⅝d. per lb.
LAMP BLACK.—£28 per ton, barrels free.
LITHOPONE, 30%.—£19 to £21 per ton.
SULPHUR.—£9 10s. to £13 per ton, according to quality.
SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.
SULPHUR PRECIP. B.P.—£55 to £60 per ton, according to quantity.
VERMILION, PALE OR DEEP.—6s. 6d.–7s. per lb.
ZINC SULPHIDE.—8d. to 11d. per lb.

Pharmaceutical and Photographic Chemicals

ACETANILIDE.—1s. 4d. per lb. for 1-cwt. lots.
ACID, ACETIC, PURE, 80%.—£37 5s. per ton d/d address U.K. in casks.
ACID, ACETYL SALICYLIC.—2s. 7d. to 2s. 9d. per lb., according to quantity.
ACID, BENZOIC B.P.—1s. 9d. to 1s. 10d. per lb., for synthetic product. Solely ex Gum, 1s. 3d. to 1s. 6d. per oz.; 50-oz. lots, 1s. 3d. per oz.
ACID, BORIC B.P.—Crystal, £31 per ton; powder, £32 per ton; For one-ton lots and upwards. Packed in 1-cwt. bags carriage paid any station in Great Britain.
ACID, CAMPHORIC.—19s. to 21s. per lb.
ACID, CITRIC.—1s. 0½d. per lb., less 5%.
ACID, GALLIC.—2s. 11d. per lb. for pure crystal, in cwt. lots.
ACID, MOLYBDIC.—5s. 3d. per lb. in ¼-cwt. lots. Packages extra. Special prices for quantities and contracts.
ACID, PYROGALLIC, CRYSTALS.—7s. 6d. per lb. for 28-lb. lots, Resublimed, 8s. 6d. per lb. for 28-lb. lots.
ACID, SALICYLIC, B.P. PULV.—1s. 5d. to 1s. 8d. per lb. Technical.—1s. to 1s. 2d. per lb.
ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.
ACID, TARTARIC.—1s. 0¼d. per lb., less 5%.
AMIDOL.—7s. 6d. to 11s. 3d. per lb., according to quantity.
AMMONIUM BENZOATE.—3s. 9d. per lb.
AMMONIUM CARBONATE B.P.—£36 per ton. Powder, £39 per ton in 5-cwt. casks. Resublimated, 1s. per lb.
AMMONIUM MOLYBDATE.—4s. 9d. per lb. in ¼-cwt. lots. Packages extra. Special prices for quantities and contracts.
ARGENT. NITRAS, CRYSTALS.—1s. 1d. per oz.
ATROPHINE SULPHATE.—8s. per oz.
BARBITONE.—5s. 9d. to 6s. per lb.
BISMUTH CARBONATE.—6s. 9d. per lb.
BISMUTH CITRATE.—8s. per lb.
BISMUTH SALICYLATE.—7s. 3d. per lb.
BISMUTH SUBNITRATE.—6s. per lb.
BISMUTH NITRATE.—Cryst. 5s. per lb.
BISMUTH OXIDE.—9s. 10d. per lb.
BISMUTH SUBCHLORIDE.—9s. 7d. per lb.
BISMUTH SUBGALLATE.—7s. 3d. per lb. Extra and reduced prices for smaller and larger quantities of all bismuth salts respectively.
BISMUTHI ET AMMON LIQUOR.—Cit. B.P. in W. Qts. 1s. 0½d. per lb.; 12 W. Qts. 11½d. per lb.; 36 W. Qts. 11d. per lb. Liquor Bismuth B.P., in W. Qts., 1s. 2d. per lb.; 6 W. Qts., 11½d. per lb.; 12 W. Qts., 10d. per lb.; 36 W. Qts., 9½d. per lb.
BORAX B.P.—Crystal, £21 10s. per ton; powder, £22 per ton; for one-ton lots and upwards. Packed in 1-cwt. bags carriage paid any station in Great Britain.
BROMIDES.—Ammonium, 1s. 9d. per lb.; potassium, 1s. 4½d. per lb.; granular, 1s. 5d. per lb.; sodium, 1s. 7d. per lb. Prices for 1-cwt. lots.
CAFFEIN, PURE.—6s. 6d. per lb.
CAFFEIN CITRAS.—5s. per lb.
CALCIUM LACTATE.—B.P., 1s. to 1s. 6d. per lb., according to quantity.
CAMPHOR.—Refined flowers, 2s. 10d. to 3s. per lb., according to quantity; also special contract prices.
CHLOROFORM.—2s. 3d. per lb., according to quantity.
EMETINE HYDROCHLORIDE.—58s. 6d. per oz.
EMETINE BISMUTH IODIDE.—33s. per oz.
EPHEDRINE, PURE.—12s. 6d. to 13s. 6d. per oz.
EPHEDRINE HYDROCHLORIDE.—9s 9d. to 10s. 6d. per oz.
EPHEDRINE SULPHATE.—9s. 9d. to 10s. 6d. per oz.
ERGOSTEROL.—2s. 6d. per gm.
ETHERS.—S.G. ·730—1s. to 1s. 1d. per lb., according to quantity; other gravities at proportionate prices.
FORMALDEHYDE, 40%.—37s. per cwt., in barrels, ex wharf.
GLUCOSE, MEDICINAL.—1s. 6d. to 2s. per lb. for large quantities.
HEXAMINE.—2s. 3d. to 2s. 6d. per lb.
HOMATROPINE HYDROBROMIDE.—27s. 6d. per oz.
HYDRASTINE HYDROCHLORIDE.—90s. per oz. for small quantities.
HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 3s. per gall.
HYDROQUINONE.—3s. 9d. to 4s. per lb., in cwt. lots.
HYPOPHOSPHITES.—Calcium, 2s. 11d. to 3s. 4d. per lb.; potassium, 3s. 2d. to 3s. 7d. per lb.; sodium, 3s. 1d. to 3s. 6d. per lb.; for 28-lb. lots.
IRON AMMONIUM CITRATE.—B.P., 1s. 11d. per lb., for 28-lb. lots. Green, 2s. 6d. per lb., list price. U.S.P., 2s. 9d. per lb. list price.
IRON PERCHLORIDE.—18s. to 20s. per cwt., according to quantity.
IRON QUININE CITRATE.—B.P., 8¼d. to 8¾d. per oz., according to quantity.
MAGNESIUM CARBONATE.—Light B.P., 36s. per cwt.
MAGNESIUM OXIDE.—Light Commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb.
MENTHOL.—A.B.R. recrystallised B.P., 14s. per lb. net; Synthetic, 8s. 6d. to 12s. per lb.; Synthetic detached crystals, 8s. 6d. to 10s. per lb., according to quantity; Liquid (95%), 9s. per lb.
MERCURIALS B.P.—Up to 1-cwt. lots, Red Oxide, crystals, 8s. 4d. to 8s. 5d. per lb., levig., 7s. 10d. to 7s. 11d. per lb.; Corrosive Sublimate, Lump, 6s. 7d. to 6s. 8d. per lb., Powder, 6s. to 6s. 1d. per lb.; White Precipitate, Lump, 6s. 9d. to 6s. 10d. per lb., Powder, 6s. 10d. to 6s. 11d. per lb., Extra Fine, 6s. 11d. to 7s. per lb.; Calomel, 7s. 2d. to 7s. 3d. per lb.; Yellow Oxide 7s. 8d. to 7s. 9d. per lb.; Persulph, B.P.C., 6s. 11d. to 7s. per lb.; Sulph. nig., 6s. 8d. to 6s. 9d. per lb. Special prices for larger quantities.
METHYL SALICYLATE.—1s. 3d. to 1s. 5d per lb.
PARAFORMALDEHYDE.—1s. 8d. per lb.
PARALDEHYDE.—1s. 1d. per lb.
PHENACETIN.—3s. 9d. to 4s. 1d. per lb.
PHENOLPHTHALEIN.—5s. to 5s. 2½d. per lb.
PILOCARPINE NITRATE.—10s. 6d. per oz.
POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—83s. per cwt., less 2½ per cent.
POTASSIUM CITRATE.—B.P., 1s. 9d. per lb. for 28-lb. lots.
POTASSIUM FERRICYANIDE.—1s. 7½d. per lb., in 125-lb. kegs.
POTASSIUM IODIDE.—16s. 8d. to 17s. 9d. per lb., as to quantity.
POTASSIUM METABISULPHITE.—50s. per cwt. d/d London, kegs free.
POTASSIUM PERMANGANATE.—B.P. crystals, 5½d. per lb., spot.
QUININE SULPHATE.—1s. 8d. per oz. for 1,000-oz. lots.
QUINOPHAN.—B.P.C., 14s. 6d. to 16s. 6d. per lb. for cwt. lots.
SACCHARIN.—43s. 6d. per lb.
SALICIN.—16s. 6d. to 17s. 6d. per lb., according to quantity.
SILVER NITRATE.—10d. per oz. for 500-oz. lots, sticks, 2d. per oz. extra.
SODIUM BARBITONUM.—8s. 6d. to 9s. per lb. for 1-cwt. lots.
SODIUM BENZOATE B.P.—1s. 6½d. per lb. for 1-cwt. lots.
SODIUM CITRATE.—B.P.C. 1911, 1s. 6d. per lb. B.P.C. 1923, and U.S.P., 1s. 10d. per lb. for 28-lb. lots.
SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 per ton, d/d consignee's station in 1-cwt. kegs.
SODIUM NITROPRUSSIDE.—16s. per lb.
SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—80s. per cwt. net, ton lots, d/s of 5 cwt. Crystals, 2s. 6d. per cwt. extra.
SODIUM SALICYLATE.—Powder, 1s. 10d. to 2s. 2d. per lb. Crystal, 1s. 11d. to 2s. 3d. per lb.
SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 2d. per lb.
SODIUM SULPHITE, ANHYDROUS.—£26 to £28 per ton, according to quantity. Delivered U.K.
STRYCHNINE, ALKALOID CRYSTAL, 2s. per oz.; hydrochloride, 1s. 9½d. per oz.; nitrate, 1s. 8d. per oz.; sulphate, 1s. 9d. per oz., for 1,000-oz. quantities.
TARTAR EMETIC, B.P.—Crystal or powder, 1s. 9d. to 2s. per lb.
THYMOL.—Puriss, 6s. to 7s. per lb., according to quantity. Natural, 12s. per lb.

Perfumery Chemicals

ACETOPHENONE.—7s. per lb.
AUBEPINE (EX ANETHOL).—9s. per lb.
AMYL ACETATE.—2s. 3d. per lb.
AMYL BUTYRATE.—4s. 9d. per lb.
AMYL CINNAMIC ALDEHYDE.—9s. per lb.
AMYL SALICYLATE.—2s. 6d. per lb.
ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.
BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.
BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—1s. 9d. per lb.
BENZYL ALCOHOL FREE FROM CHLORINE.—1s. 9d. per lb.
BENZYL BENZOATE.—2s. 2d. per lb.
CINNAMIC ALDEHYDE NATURAL.—11s. 9d. per lb.
COUMARIN.—12s. per lb.
CITRONELLOL.—6s. 6d. per lb.
CITRAL.—6s. 6d. per lb.
ETHYL CINNAMATE.—6s. 9d. per lb.
ETHYL PHTHALATE.—2s. 6d. per lb.
EUGENOL.—8s. 9d. per lb.
GERANIOL.—6s. to 10s. per lb.
HELIOTROPINE.—5s. 6d. per lb.
METHYL ANTHRANILATE.—6s. 3d. per lb.
METHYL BENZOATE.—4s. 3d. per lb.
PHENYL ETHYL ACETATE.—10s. per lb.
PHENYL ETHYL ALCOHOL.—8s. 3d. per lb.
RHODINOL.—40s. per lb.
SAFROL.—1s. 6d. per lb.
VANILLIN, EX CLOVE OIL.—14s. 6d. to 16s. 6d. per lb.
Guaiacol.—13s. to 15s. per lb.

Essential Oils

ANISE OIL.—2s. 6d. per lb.
BERGAMOT OIL.—9s. per lb.
BOURBON GERANIUM OIL.—17s. per lb.
CAMPHOR OIL.—White, 2s. per lb.; Brown, 1s. 6d. per lb.
CINNAMON OIL LEAF.—5s. per oz.
CITRONELLA OIL.—Java, 2s. 3d. per lb., c.i.f. Pure Ceylon, 2s. 3d. per lb.
CLOVE OIL, 90/92%.—7s. per lb.
EUCALYPTUS OIL, AUSTRALIAN, B.P. 70/75%.—1s. 9d. per lb.
LAVENDER OIL.—Mont Blanc, 38/40%, 8s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE *by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

London, April 15, 1931.

A SLIGHT improvement in the demand for general chemicals can be reported during the past week. Prices continue steady, with very little alteration.

General Chemicals

ACETONE.—The market remains unchanged and generally firm at £60 to £63 per ton, according to quantity, there being a fair demand.

ACID ACETIC.—The market is unchanged at £36 5s. to £38 5s. per ton for technical 80%, and £37 5s. to £39 5s. for pure 80%.

ACID CITRIC.—Continues quiet and in buyers' favour at about 1s. 1d. per lb., less 5%.

ACID FORMIC 85%.—Is in fairly good request at £38 per ton.

ACID LACTIC.—Unchanged, with a moderate demand at £39 to £40 per ton for 50% by weight, pale quality.

ACID OXALIC.—In good demand at £30 7s. 6d. to £32 per ton, according to quantity.

ACID TARTARIC.—Slow of sale, with the market unchanged at 11¾d. to 1s. per lb., less 5%.

ALUMINA SULPHATE.—The market is unchanged at £7 15s. to £8 5s. per ton for the 17/18% iron free quality, there being a fairly regular demand.

ARSENIC.—Supplies are still rather difficult for early delivery, and the market is maintained at £19 to £19 10s. per ton.

BARIUM CHLORIDE.—Rather more business is being received for this product, with the market steadier at £9 10s. to £10 per ton.

CREAM OF TARTAR.—There is rather a better demand, with the market steady at 82s. to 83s. per cwt., ex warehouse, London.

COPPER SULPHATE.—There is a larger demand, with the market steady at about £22 to £22 10s. per ton, less 5%, free on rails London.

FORMALDEHYDE.—Steady at £30 to £30 10s. per ton.

LEAD ACETATE.—Slightly easier at about £34 per ton for white grade, with brown quoted at £1 per ton less.

LEAD NITRATE.—A small business is passing at about £29 10s. per ton.

LITHOPONE.—The market is unchanged at £18 to £22 per ton, according to grade and quantity.

POTASSIUM BICHROMATE.—Firm at 4¼d. per lb.

POTASSIUM CHLORATE.—The market continues firm at £28 to £32 per ton.

POTASSIUM PERMANGANATE.—There is a good demand at 5¼d. per lb. to 5½d. per lb., ex wharf London.

SODA BICHROMATE.—The market is firm at 3½d. per lb., and the product is in fairly good request.

SODIUM CHLORATE.—Quoted at £26 10s. per ton, with conditions rather firmer than of late.

SODIUM HYPOSULPHITE.—Photographic crystals £14 5s. per ton, and in good demand. Commercial quality in quiet request at about £8 10s. per ton.

SODIUM PRUSSIATE.—The market is firm at 4¾d. to 5¼d. per lb.

TARTAR EMETIC.—Steady at 10¾d. per lb.

ZINC SULPHATE.—Rather more business is coming to hand, with the market firmer at £11 to £11 10s. per ton.

Coal Tar Products

There is no change to report in the coal tar products market from last week, and prices remain the same.

MOTOR BENZOL.—Is quoted at 1s. 4½d. to 1s. 5½d. per gallon, f.o.r.

SOLVENT NAPHTHA.—Remains at 1s. 1½d. to 1s. 2d. per gallon, f.o.r.

HEAVY NAPHTHA.—Is obtainable at 11d. to 1s. 0½d. per gallon, f.o.r.

CREOSOTE OIL.—Is unchanged at about 3d. to 3½d. per gallon, f.o.r. in the North, and at 4d. to 4½d. per gallon in London.

CRESYLIC ACID.—Remains at about 1s. 8d. per gallon for the 98/100% quality, and at about 1s. 6d. per gallon for the dark quality 95/97%.

NAPHTHALENE.—The firelighter quality is quoted at £3 10s. to £3 15s. per ton, the 74/76 quality at £4 to £4 5s. per ton, and the 76/78 quality at about £5 per ton.

PITCH.—Is obtainable at 37s. 6d. to 40s. per ton, f.o.b. East Coast port.

Latest Oil Prices

LONDON, April 15.—LINSEED OIL was firm and 2s. 6d. to 5s. per ton higher. Spot, ex mill, £18 10s.; April, £16 15s.; May-August, £17 12s. 6d.; September-December, £18 10s., naked. RAPE OIL was inactive. Crude extracted, £30; technical refined, £31 10s., naked, ex wharf. COTTON OIL was quiet. Egyptian crude, £21 10s.; refined common edible, £25 10s.; and deodorised, £27 10s., naked, ex mill. TURPENTINE was firm at 6d. per cwt. advance. American, spot, 43s. 6d.; and May-June, 44s.

HULL.—LINSEED OIL.—Spot to August, £17 12s. 6d.; September-December, £18 5s. per ton, naked. COTTON OIL.—Egyptian crude, spot, £21; edible, refined, spot, £23 10s.; technical spot, £23 5s.; deodorised, £25 10s. per ton. CASTOR OIL.—Pharmacy spot, 40s. 6d.; firsts, 35s. 6d.; seconds, 33s. 6d. per cwt. PALM KERNEL OIL.—Crude, spot, 5½ per cent., £23 per ton, naked. GROUNDNUT OIL.—Crushed extracted, spot, £25 10s.; deodorised, £29 10s. per ton. SOYA OIL.—Crushed extracted, spot, £19; deodorised, £22 10s. per ton. RAPE OIL.—Crushed extracted, spot, £29 10s. refined. £31 10s. per ton. COD OIL nominal at 20s. per cwt. TURPENTINE, 44s. per cwt.

Nitrogen Fertilisers

Sulphate of Ammonia.—Export.—The market continues quiet with prices unchanged at £7 per ton, f.o.b. U.K. port in single bags for neutral quality 20·6 per cent. nitrogen. *Home.*—A very brisk demand continues in Scotland and in Ireland; very large sales have been reported during the week. The seasonal demand in England appears to be a little less than that of last year.

Nitrate of Soda.—Larger shipments have been reported for continental markets.

South Wales By-Products

SOUTH Wales by-product activities continue to be slow and uncertain. There is no improvement in the call for pitch, and the uncertain note in this product is likely to remain until there is a big improvement in the export section of the patent fuel industry. Road tar is in good demand with values ranging round 13s. per 40-gallon cask. There is a better call for refined tars, both coke-oven and gasworks tar having a steady demand with values unchanged. Naphthas are slow; solvent has a moderate call, but heavy has practically no demand. Values are unchanged. Patent fuel and coke exports continue to be unsatisfactory. Patent fuel prices, for export, are as follows:—20s. 6d. to 21s., ex-ship Cardiff; 19s. 6d. to 20s., ex-ship Swansea-Newport. Coke prices are:—Best foundry, 34s. to 36s. 6d.; good foundry, 22s. 6d. to 25s.; furnace, 16s. 6d. to 17s. 6d.

Titanium White Manufacture in France

THERE is an increasing interest in the production of titanium white in France. Numerous attempts have been made to establish the industry in France, but the higher cost of producing titanium oxide has handicapped the expansion of sales in that country in competition with zinc oxide. Before the war a French company was formed to manufacture titanium white, but this project did not materialise, and the company served merely as an importer of the output of a Norwegian plant. Actual manufacture was initiated in 1923 by the Fabrique de Produits Chimiques de Than et Mulhouse, using the process of the Société de Produits Chimiques de Terres Rares. At present this company produces about 600 tons per annum. According to the United States Assistant Trade Commissioner in Paris, the Compagnie Generale de Produits Chimiques de Louvres is planning to operate a plant using a different process, but as yet actual manufacture has not been initiated.

Insecticides in Holland

THE chief arsenical insecticide applied in Netherland agriculture is Paris green, which is used either in solution or in dry mixture with bran. Bordeaux mixture and Burgundy mixture are used in combating potato diseases; sodium silicofluoride finds numerous applications; nicotine sulphate is used in small quantities. These insecticides are imported chiefly by dealers. Farmers' unions frequently buy co-operatively for distribution of supplies among their membership. The Government Plant Disease Service at Wageningen acts in an advisory capacity with regard to the efficaciousness of the insecticides offered for sale.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE *by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing this firm's independent and impartial opinions.*

Glasgow, April 14, 1931.

RECOVERY from the Easter vacation has been slow, but the outlook for the Scottish heavy chemical market is more hopeful.

Industrial Chemicals

ACETONE.—B.G.S.—£60 to £63 per ton, ex wharf, according to quantity.

ACID, ACETIC.—Prices ruling are as follows: glacial, 98/100%, £47 to £58 per ton; pure, £37 5s. per ton; technical, 80%, £36 5s., delivered in minimum lots of 1 ton.

ACID, BORIC.—Granulated commercial, £22 per ton; crystals, £23; B.P. crystals, £31 per ton; B.P. powder, £32 per ton, in 1-cwt. bags, delivered Great Britain free in one-ton lots upwards.

ACID, HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. per carboy. Dearsenicated quality, 5s. per carboy, ex works, full wagon loads.

ACID, NITRIC, 80° QUALITY.—£23 per ton, ex station, full truck loads.

ACID, OXALIC.—98/100%.—On offer at the same price, viz.: 3¼d. per lb., ex store. On offer from the Continent at 3¼d. per lb., ex wharf.

ACID, SULPHURIC.—£3 7s. 6d. per ton, ex works, for 144° quality; £5 15s. per ton for 168°. Dearsenicated quality, 20s. per ton extra.

ACID, TARTARIC, B.P. CRYSTALS.—Quoted 11¾d. per lb., less 5%, ex wharf. On offer for prompt delivery from the Continent at 1s. per lb., less 5%, ex wharf.

ALUMINA SULPHATE.—Quoted round about £8 10s. per ton, ex store.

ALUM, LUMP POTASH.—Now quoted £8 10s. od. per ton., c.i.f. U.K. ports. Crystal meal, about 2s. 6d. per ton less.

AMMONIA ANHYDROUS.—10¼d. per lb., containers extra and returnable.

AMMONIA CARBONATE.—Lump quality quoted £36 per ton. Powdered, £38 per ton, packed in 5 cwt. casks, delivered U.K. stations or f.o.b. U.K. ports.

AMMONIA LIQUID, 80°.—Unchanged at about 2½d. to 3d. per lb., delivered, according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture quoted £21 to £22 per ton, ex station. Fine white crystals offered from the Continent at about £17 5s. per ton, c.i.f. U.K. ports.

ANTIMONY OXIDE.—Spot material obtainable at round about £26 per ton, ex wharf. On offer for shipment from China at about £25 per ton, c.i.f. U.K.

ARSENIC, WHITE POWDERED.—Quoted £22 10s. per ton, ex wharf Spot material still on offer at £22 15s. per ton, ex store.

BARIUM CHLORIDE.—In good demand and price about £9 10s. per ton, c.i.f. U.K. ports. For Continental materials our price would be £8 10s. per ton, f.o.b. Antwerp or Rotterdam.

BLEACHING POWDER.—British manufacturers' contract price to consumers unchanged at £6 15s. per ton, delivered in minimum 4-ton lots. Continental now offered at about the same figure.

CALCIUM CHLORIDE.—Remains unchanged. British manufacturers' price, £4 15s. to £5 5s. per ton, according to quantity and point of delivery. Continental material on offer at £4 7s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—At about £3 15s. per ton, f.o.r. works, or £4 12s. 6d. per ton, f.o.b. U.K. ports.

FORMALDEHYDE, 40%.—Now quoted £30 10s. per ton, ex store. Continental on offer at about £20 per ton, ex wharf.

GLAUBER SALTS.—English material quoted £4 10s. per ton, ex station. Continental on offer at about £3 per ton, ex wharf.

LEAD, RED.—Price now £32 per ton, delivered buyers' works.

LEAD, WHITE.—Quoted £42 per ton, carriage paid.

LEAD ACETATE.—White crystals quoted round about £34 to £35 per ton c.i.f. U.K. ports. Brown on offer at about £1 per ton less.

MAGNESITE, GROUND CALCINED.—Quoted £9 7s. 6d. per ton, ex store.

METHYLATED SPIRIT.—Industrial quality 64 o.p. quoted 1s. 8d. per gallon, less 2½% delivered.

POTASSIUM BICHROMATE.—Quoted 4¼d. per lb., delivered U.K. or c.i.f. Irish ports, with an allowance for contracts.

POTASSIUM CARBONATE.—Spot material on offer, £25 10s. per ton ex store. Offered from the Continent at £24 15s. per ton, c.i.f. U.K. ports.

POTASSIUM CHLORATE, 99¾/100% POWDER.—Quoted £29 per ton ex store; crystals 30s. per ton extra.

POTASSIUM NITRATE.—Refined granulated quality quoted £20 17s. 6d. per ton, c i.f. U.K. ports. Spot material on offer at about £20 10s. per ton ex store.

POTASSIUM PERMANGANATE B.P. CRYSTALS.—Quoted 5¼d. per lb., ex wharf.

POTASSIUM PRUSSIATE (YELLOW).—Spot material quoted 7d. per lb. ex store. Offered for prompt delivery from the Continent at about 6¾d. per lb. ex wharf.

SODA CAUSTIC.—Powdered 98/99%, £17 10s. per ton in drums, £18 15s. in casks. Solid 76/77% £14 10s. per ton in drums, £14 12s. 6d. per ton for 70/72% in drums, all carriage paid buyer's station, minimum four-ton lots. For contracts 10s. per ton less.

SODIUM BICARBONATE.—Refined recrystallised, £10 10s. per ton, ex quay or station. M.W. quality 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3½d. per lb., delivered buyer's premises, with concession for contracts.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powdered or pea quality, 7s. 6d. per ton extra. Light soda ash, £7 13s. per ton, ex quay, minimum four-ton lots, with various reductions for contracts.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 2s. 6d. per ton, ex station, minimum four-ton lots. Pea crystals on offer at £15 per ton, ex station, minimum four-ton lots.

SODIUM NITRATE.—Chilean producers now offer at £10 per ton, carriage paid, buyer's sidings, minimum six-ton lots.

SODIUM PRUSSIATE.—Quoted 5½d. per lb., ex store. On offer at 5d. per lb., ex wharf, to come forward

SODIUM SULPHATE (SALTCAKE).—Price, 60s. per ton, ex works; 65s. per ton, delivered, for unground quality. Ground quality 2s. 6d. per ton extra.

SODIUM SULPHIDE.—Prices for home consumption: solid 61/62%, £10 per ton; broken, 60/62%, £11 per ton; crystals 30/32%, £8 2s. 6d. per ton, delivered buyers' works on contract, minimum four-ton lots. Special prices for some consumers. Spot material 5s. per ton extra.

SULPHUR.—Flowers, £12 per ton; roll, £10 10s. per ton; rock, £9 5s. per ton; ground American, £8 15s. per ton, ex store.

ZINC CHLORIDE 98%.—British material now offered at round about £19 per ton, f.o.b. U.K. ports.

ZINC SULPHATE.—Quoted £11 per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

Fertilisers for Canadian Wheat Lands

THE great fertiliser plant of the Consolidated Mining and Smelting Company at Trail, B.C., is now nearing completion, and will be able to supply chemical fertilisers to farmers on the Canadian prairies some time in the spring. During the past three years extensive trials with both ammonium-phosphate and triple super-phosphate have been conducted on hundreds of farms in the Prairie Provinces. In Manitoba high grade triple super-phosphate and ammonium-phosphate drilled in at the time of seeding increased yields of wheat by from 18% to 50% as compared with untreated crops in the same localities, and produced corresponding increases with other grain. Earlier maturity, another characteristic of the fertilised crops, will be extremely valuable in the northern areas of the arable section of the Province, as well as in the neighbourhoods where grain is normally liable to rust and frost, and where early maturity will, therefore, materially reduce loss. Advances of as much as twelve days in the time of ripening have been recorded, while in the majority of tests the improvement in this respect varied between five and ten days.

Demand for Nitrocellulose Lacquers in Hungary

ACCORDING to the United States Consul at Budapest, the present annual consumption of nitrocellulose lacquers in Hungary is estimated at 350 to 400 tons. Originally imported for the motor vehicle trade, they are now to be used in producing patent leather, and in finishing sewing machines and other metal manufactures. The Hungarian State Railways also include in their five-year maintenance and repair programme, provision for the painting of 800 passenger cars with nitrocellulose lacquers. Present competitive products entering the Hungarian market come from the United States, Switzerland, France, Germany and Great Britain.

British Trade with Manchuria

THE Department of Overseas Trade announce that Mr. J. C. Hutchison, O.B.E., Commercial Secretary at Harbin, in Manchuria, has now opened his office. Communications should be addressed as follows:—J. C. Hutchison, Esq., O.B.E., Commercial Secretary, British Consulate General, Harbin, Manchuria.

Manchester Chemical Market

(From Our Own Correspondent.)

Manchester, April 16, 1931.

No great amount of activity has been in evidence on the chemical market here during the past week, business continuing on strictly moderate lines and most of it in respect of early deliveries. Chemical-using works in the textile trades—bleachers, dyers and finishers—are taking fair contract deliveries of materials. Cotton trade progress, however, is much less marked than selling interests on the chemical market would wish, for the movement of chemicals in this part of the country largely depends upon the state of activity in the cotton and allied trades. In the meantime, chemical prices keep steady to firm in most cases.

Heavy Chemicals

Demand for chlorate of soda this week has been on a moderate scale, with offers of this material at up to £27 per ton. There has been little further change in the price position of dibasic phosphate of soda, round £10 per ton being quoted. A fair inquiry for hyposulphite of soda is reported, values keeping steady at up to £15 10s. per ton for the photographic and about £9 for the commerical grade. Bicarbonate of soda continues on offer at round £10 10s. per ton, a not unsatisfactory movement in this section being reported. There is a quiet demand about for bichromate of soda on the basis of 3½d. per lb., less discounts of 1 to 2½ per cent. according to quantity. Sales of caustic soda continue on a fair scale, with contract quotations at the old range of £12 15s. to £14 per ton, according to quantity. The demand for sulphide of sodium is rather subdued; the commercial quality product is selling at about £8 per ton and the 60-65 per cent. concentrated solid at £9 10s. Prussiate of soda is in moderate request, values being fully maintained at from 4¾d. to 5¼d. per lb., according to quantity. Saltcake has met with a quiet demand this week, with current offers of this material at from £2 15s. to £3 per ton. Alkali is firm and in fair inquiry at £6 per ton.

Buying interest in permanganate of potash continues on a quiet scale, with the B.P. grade quoted at about 5½d. per lb. and the commercial at 5¼d. Chlorate of potash is quoted still at round £27 10s. per ton, without, however, any material expansion in the demand. Bichromate of potash is in quietly steady request, with offers on the basis of 4¼d. per lb., less 1 to 2½ per cent. Caustic potash is held at from £28 10s. to £29 per ton, with carbonate at £25. A moderate demand is reported in the case of yellow prussiate of potash and values are firm at from 6¾d. to 7¼d. per lb., according to quantity.

Although only in relatively quiet demand arsenic prices are steady at from £19 to £19 5s. per ton at the mines, for white powdered, Cornish makes. Sulphate of copper sales are still generally confined to near positions and are only very moderate in the aggregate; values are in the neighbourhood of £20 per ton, f.o.b. The demand for the acetates of lime is quiet, with the grey quality on offer at about £13 5s. per ton and the brown at £7 5s. There has been no change in the lead products, nitrate being currently quoted at round £29 per ton, and white and brown acetates at £33 and £32.

Acids and Tar Products

In the acid section, neither tartaric at from 11¼d. to 11½d. per lb. nor citric at about 1s. 0¾d. is too strong and buying interest is on quiet lines. Oxalic acid is fairly steady at about £1 12s. per cwt., ex store, a moderate trade being reported. Acetic acid is in fair request and prices are firm at £37 per ton for the commercial 80 per cent. quality and about £51 per ton for the glacial technical.

Among the by-products, pitch is attracting little attention, with values at about 37s. per ton, f.o.b. Creosote oil seems to be easy in tendency at from 3d. to 4¼d. per gallon, according to grade, with the demand for home and export consumption on quiet lines. Carbolic acid crystals are fairly steady at about 5¼d. per lb., f.o.b., with crude in quiet request at from 1s. 1d. to 1s. 2d. per gallon, naked, at works. There is a moderate movement of solvent naphtha, offers of which are at round 1s. 2d. per gallon, at works.

Tariff Change

British Honduras.—An Order in Council, dated February 25, exempts from import dury for a period of three years as from December 1, 1930, resin and tallow imported into the Colony for use in connection with the manufacture of soaps.

Company News

British Drug Houses, Ltd.—The directors recommend a final dividend of 3 per cent., making a total of 5 per cent. for the year, on the ordinary shares.

I.G. Farbenindustrie.—It is announced that the annual meeting will be held in May when a dividend of 12 per cent. (as for the previous year) will be proposed.

Allen-Liversidge, Ltd.—A final dividend is recommended on the ordinary shares for the eight months ended December 31, 1930, of 2⅔ per cent., actual, less tax, making 5⅓ per cent. for the year.

Lagunas Nitrate Co., Ltd.—At a meeting held in London on April 9, a resolution for the sale of the undertaking and assets of the company to Compania de Salitre de Chile ("Cosach") was passed.

British Oxygen Co.—A final dividend has been declared on the ordinary shares for nine months to December 31 last of 3 per cent., making 6 per cent. for the nine months, against 10 per cent. in the previous year.

Non-Inflammable Film Co., Ltd.—A special meeting of the shareholders has been called for April 30, at noon, at the Holborn Restaurant, London. A full report on the company's position is to be given and a resolution submitted for a voluntary winding-up. A proposal for reconstruction will also be submitted if arrangements can be made for obtaining the additional capital required.

Borax, Ltd.—The directors announce that consideration of payment of the dividend on the 120,000 £5 6 per cent. deferred ordinary shares, due on May 1, has been postponed until the accounts for the year to September 30 next are available. No dividend was paid on these shares for 1929-30. The last payment on the 1,150,000 £1 deferred ordinary shares was 7½ per cent. in 1927-1928.

Rio Tinto Co., Ltd.—The report for 1930 shows that sales of produce yielded £1,070,400, against £1,812,199 in 1929, while other income was £71,293, against £117,911. After deducting expenses, depreciation (£53,016, against £278,512), and staff pension fund allocation, the net balance is £686,966, against £1,286,279. A final ordinary dividend of 10 per cent. is proposed, making 20 per cent. for the year, against a total of 55 per cent. last year, and leaving £384,367 to go forward, against £203,651 brought in.

Lever Brothers, Ltd.—Covering the first full year of operations since the merging of the company's interests with the Margarine Union and Margarine Unie, and the formation of Unilever, Ltd., the accounts of Lever Brothers, Ltd., for 1930 show a balance profit of £5,868,850. This compares with £6,213,505 earned in 1929. The accounts of Unilever, Ltd., for 1930 show an increased profit, the figure of £4,304,217 comparing with £3,524,784 a year ago. The dividend is maintained at 10 per cent. and £1,500,000 is placed to general reserve.

English China Clays, Ltd.—The report for the year 1930 states that profits (after making all usual provisions for depreciation of plant, machinery, leases, etc., but before charging tax) amounted to £75,089, to which is added amount brought forward £19,110. After deducting dividend on preference shares for half-year to June 30, 1930, £13,967, and income-tax £14,520, there remains £65,711. The directors recommend dividend on the preference shares for the half-year to December 31, 1930 (paid February 1, 1931), £13,967, transfer to reserve for contingencies and general purposes £30,000, carrying forward £21,744.

Chemical Trade Inquiries

These inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

Egypt.—A firm of agents established in Alexandria desire to be placed in touch with British manufacturers of pharmaceutical products. (Ref. No. 320.)

Italy.—A firm in Milan desires to represent British exporters of tallow, palm and other vegetable oils, animal oils and raw materials for textile, paper, soap and tanning industries. (Ref. No. 315.)

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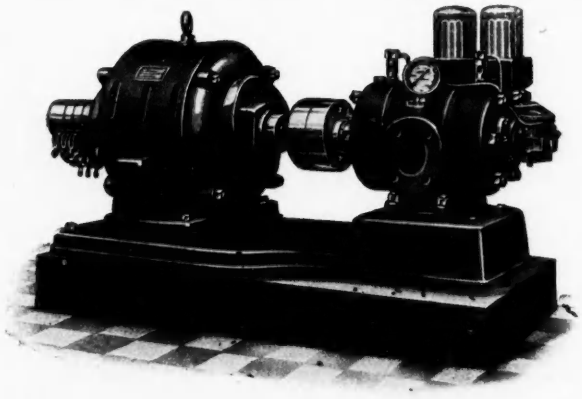

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Nitrocellulose Lacquer Statistics

Increase in United States Output

THE output of nitrocellulose lacquers in the United States has more than doubled during the past four years. Statistics compiled by the Bureau of the Census indicate a total domestic production in 1927 of 18,496,000 gallons, valued at $45,908,600, which increased to 23,978,000 gallons, valued at $57,391,800, during 1929. The constant expansion of domestic sales is supplied entirely by domestic production, and, in addition, exports of lacquers represent less than 2 per cent. of the output.

Exports of nitrocellulose lacquers increased materially in 1930 as contrasted with shipments during the preceding year, despite adverse conditions prevailing throughout the world. These exports found wider distribution in foreign markets in 1930 than in the preceding year. Europe still maintained its position as the leading market, taking 122,398 gal., valued at $387,511; America was second, with 72,198 gal., worth $254,522; and Asiatic markets, the third group, took 61,043 gal., valued at $203,571. Particular advances were evidenced in the Far East and Canada during 1930.

These figures, with those for the ultimate distribution of the U.S. production as given below, should be of interest to suppliers of chemicals for the nitrocellulose lacquer industry in Great Britain, where there are now ten or twelve large firms producing a total annual output of approximately 2,000,000 gal.

Foreign markets for nitrocellulose lacquers, as produced in the United States, are :—

Country of Destination.	1929	1930
Argentina	$79,703	$79,319
Canada	27,927	71,830
Japan	47,709	64,571
Italy	130,161	64,483
Spain	52,308	56,259
Switzerland	13,085	43,173
Brazil	43,448	41,896
New Zealand	35,796	40,420
Mexico	28,889	39,746
Netherland East Indies	13,373	38,817
Belgium	24,704	30,822
Netherlands	22,164	28,301
British India	20,300	26,946
Union of South Africa	38,300	26,698
China	5,694	24,814
Other countries	297,513	333,547
Total	$881,074	$1,011,642

Decreased Consumption of Molasses

AT the annual meeting of United Molasses Co., Ltd., at Cannon Street Hotel, London, on Friday, April 10, the chairman, Mr. F. K. Kielberg, said that the board were not unhopeful as to the future of the company, though the present depression did not provide any foundation for early improvement. So long as the present greatly decreased consumption of molasses continued the company's purchase contracts for molasses in the East had unfortunately to be regarded as a liability, but the production of molasses in Cuba and the West Indies had declined to such an extent that it would only require a very moderate revival in the American demand for their Eastern supply to be again required. As in previous years it is the intention of the board to issue an interim report to the shareholders in September, by which time it may be possible to give an indication of the probable result of the year's trading.

United Molasses was registered in 1926 and has an issued capital of £7,351,251. In the first three years of its existence dividends of 10 per cent., 17 per cent. (plus a capital bonus of 2 per cent.) and 19 per cent. were paid. In 1929 it earned a net profit (after depreciation) of £1,039,116, placed £350,000 to general reserves, and paid a dividend of 22½ per cent. with a bonus of 2½ per cent.; in addition in April, 1930, a capital bonus of 50 per cent. in ordinary shares was distributed. The report for 1930, however, disclosed the fact that, consequent on the collapse in the value of molasses, stocks had to be written down by £1,364,421, leaving a deficit of £913,434, which was reduced to £64,260 by utilising the balance of the company's reserves.

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

Mortgages and Charges

[*NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.*]

McCLURE, YOUNG AND CO., LTD., London, S.W., manufacturers of disinfectants. (M., 18/4/31.) Registered March 31, £200 debentures part of £1,000; general charge. *Nil. April 22, 1929.

TINDALE ZINC EXTRACTION, LTD., Newcastle-on-Tyne. (M., 18/4/31.) Registered March 24, £400 debenture, to Sir R. A. Pease, Northgate, Darlington; general charge (ranking in priority to £4,000 debenture and subject to debentures for £3,000 and £2,500). *£7,000. December 31, 1930.

New Companies Registered

DYOLA, LTD.—Registered April 13. Nominal capital, £100 in £1 shares. Manufacturers of and dealers in dyes and dyestuffs, and materials, articles and products necessary or convenient for the production of dyes, manufacturers of and dealers in fine chemicals; chemists, druggists, etc. A subscriber: F. A. S. Gwatkin, 31/34, Basinghall Street, London, E.C.2.

GENERAL PLASTICS CORPORATION, LTD.—Registered April 2. Nominal capital, £20,000 in £1 shares. Manufacturers and producers of plastic materials and substances of all kinds; chemists, druggists, oil and colour men, manufacturers of cement, oils, paints, pigments and varnishes, etc. A subscriber: W. Leonard, 130, Silverdale Avenue, Westcliff-on-Sea.

E. F. HOUGHTON AND CO. OF ENGLAND, LTD.—Registered April 8. Nominal capital, £25,000 in £1 shares. Manufacturers of and dealers in oils, fats, greases and spirits of all kinds and the by-products thereof, tanners, dealers in hides, analytical and research chemists, etc. A director: A. E. Carpenter of Philadelphia, U.S.A. Solicitor: S. V. Clift, 5, Union Street, Birmingham.

INTERNATIONAL LUBRICATION CO., LTD.—Registered April 1. Nominal capital, £7,500 in £1 shares. Grease manufacturers, oil refiners and blenders, oil and grease merchants, manufacturers of and dealers in chemical, industrial and other preparations, etc. Directors: R. A. Byass, 28, New Cavendish Street, London, W.

Chemical and Wood Industries

AN extraordinary meeting of Chemical and Wood Industries is to be held on Tuesday, May 5, at Winchester House, London, to consider the reduction and consolidation of the capital from £1,000,000 to £347,675. This scheme proposes the cancelling of 6,643 forfeited shares; the writing off of 1s. 9d. from each of the issued shares to cover preliminary expenses; and the return to shareholders of capital which is in excess of the requirements of the company, amounting to 11s. 3d. in cash per £1 share. The resulting 7s. shares would then be consolidated into £1 shares, and the nominal capital of the company restored to £1,000,000, of which £652,325 will be unissued.

Chemical and Wood Industries was formed in 1929 to acquire a controlling interest in the Destilacija Deva D.D. (Wood Distillation Co.), established eight years previously under Yugoslavian law to acquire chemical works and timber concessions in Bosnia.

Phenol to be Produced in Canada

THE Dominion Tar and Chemical Company, Ltd., which is now controlled in Canada, is building a $250,000 plant in Toronto for the manufacture of phenol and related products, including ortho cresol, meta-para cresol, cresylic acid, and various high-boiling acids. Phenol is not at present produced on a commercial scale in Canada.